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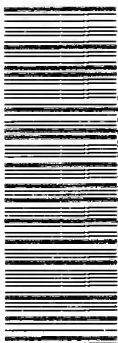
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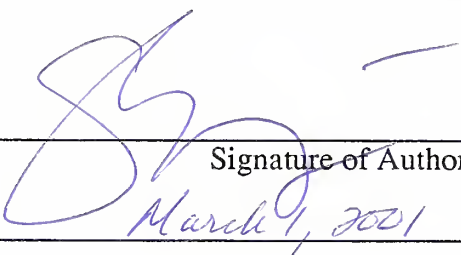
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**Legal, Professional, Public and Policy Barriers to the Development of Organ
Donation and Transplantation Programs in The Republic of Armenia**

**A Thesis Submitted to the Yale University School of Medicine in Partial
Fulfillment of the Requirements for the Degree of Doctor of Medicine**

**by
Sharon Anoush Chekijian
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ABSTRACT

Legal, Professional, Public and Policy Barriers to the Development of Organ Donation and Transplantation in the Republic of Armenia

Sharon Anoush Chekijian (Sponsored by Asghar Rastegar, Internal Medicine, Yale University School of Medicine, New Haven, CT, and by Ministry of Health, Republic of Armenia, Yerevan, Armenia)

Statement of purpose: This study proposes to document and assess the current status of organ donation and transplantation by assessing the legislation, public policy, professional and general public opinion in the Republic of Armenia.

Methods: This project is an interdisciplinary project that encompasses law, policy, and medicine. Legislation was surveyed and translated. Public policy towards transplantation with regard to financial concerns, feasibility of developing centralized wait-lists, and commitment to specific donor/transplantation legislation was assessed and documented with cooperation of the Ministry of Health. Two surveys were administered, one to the general public and one to practicing physicians. The surveys were adapted from The Partnership for Organ Donation/Gallup Poll survey of 1993. The instrument addresses such issues as attitudes toward death and donation, degree of willingness to donate, and financial considerations.

Results: Transplantation legislation was elaborated and now currently exists in a draft form in the Republic of Armenia. Overall, there appears to be support for a law to legalize cadaveric organ donation and transplantation. 70.4% of the population would support such a law. The logistics of how a transplantation program is to be organized remains to be legislated. Given little exposure to the subject of donation, Armenians seem accepting of organ donation. 47.5% of those polled said they would like to donate their organs upon their death. 38.2% of the population states that in the absence of an advance directive, they would be willing to donate the organs of a loved one to a stranger in need. 85.8% of physicians would agree with a new law to legalize transplantation. There was a widespread misconception that organ donation decreases both the longevity and the quality of life of the donor.

Conclusions: Successful navigation of barriers to implementation of transplantation programs will lead to a sufficient, timely, equitable and life-saving supply of organs. Failure to address these issues can lead to undesirable commercialism, inequality in the distribution of organs, and ethical dilemmas for physicians who have no other alternatives to offer their patients. The development of education programs for both physicians and the general public should serve to overcome the barriers delineated by our survey results. The findings of this project will form the basis for a report to the Minister of Health and will thus serve as the impetus for debate, dialogue, and collaboration between physicians, lawmakers, and policy officials within the Republic.

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To the hundreds of Armenians in Yerevan who agreed to answer our survey in the hopes that their opinions on organ donation and transplantation would be understood.

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Chapter I

Introduction

1.1 Project background

The work that follows is an attempt to understand the status of organ transplantation and donation in the Republic of Armenia. Armenia is a small landlocked country situated between Turkey, Ex-Soviet Georgia, Iran, Azerbaijan and the disputed territory of Nakitckevan which occupies a territory of 29,800 square kilometers. It was established as an independent state in 1918 and was annexed as a republic to the Soviet Union in 1920. Following the fall of the Soviet Union in 1991, Armenia became an independent democratic republic with a parliamentary system of government. (1) The population of Armenia has grown from a population of 720,000 inhabitants in 1918 to a currently estimated population of 3,344,336 (July 2000 est). (2)

In a country with limited financial resources the question of suitability must be posed. Should transplantation be a priority for the nascent nation? A public health priority perhaps not, but there must still be an emphasis on the reality facing Armenia. As will be discussed below, transplantation is taking place on a small scale but without the benefit of adequate legislation and policy to ensure a fair and socially acceptable method of distribution. The case of the establishment of a bone marrow transplant center in Zagreb, Yugoslavia in 1987 showed that patients and doctors in "3rd world countries" are often eager to practice "1st World" medicine often at the expense of other public health priorities. In most cases the desirability of indigenous programs is logical while at the same time prohibitively expensive. (3) The question of whether or not developing countries should prioritize transplantation in the face of enormous health and welfare problems has been discussed in the case of end stage renal disease. The answer has been

affirmative. The capacity for dialysis in developing nations is most often inadequate and prohibitively expensive so that transplantation now has become less of a cutting edge technology and more of a necessity. (4) These cost analyses have been calculated by a cost/year of survival methodology. The major cost of transplantation comes from the purchase of cyclosporine for immunosuppression. In addition to cost analysis, which may or may not support the logic of prioritizing transplantation, is the simple fact that such activity does exist and will continue to develop as long as physicians and patients insist on finding ways to gain access to these lifesaving technologies.

Transplantation is at the intersection of technology, law, ethics, policy and medicine. Accordingly, this project is an interdisciplinary project that encompasses law, policy, and medicine. In many areas of the world, transplantation of organs is an evolving issue that has caused professionals and policy makers to grapple with many ethical and legal issues previously left un-addressed. The Republic of Armenia is no exception. The inevitability of the development of indigenous transplantation and donation programs requires a complete examination of eventual barriers to program implementation. Four areas of importance will be investigated within the scope of this project. Legal statutes governing transplantation, public and professional attitudes toward organ donation/transplantation and policy issues surrounding transplantation. Current legal statutes and public policy towards transplantation were documented, and both public and professional opinion were polled by questionnaire. Findings will be discussed and used to construct strategies and modules for professional education and public awareness campaigns. The findings of this project will form the basis for a report to the Minister of Health of the Republic of Armenia and will thus serve as the impetus for debate, dialogue, and collaboration between physicians, lawmakers, and policy officials within the Republic. Our hope is that this process would lead to an organized and acceptable approach to ensuring a

constant and sufficient supply of organs for transplantation well in advance of the anticipated and inevitable need for domestic transplantation.

Kidneys can be obtained from living related and non-related donors as well as cadavers. Thus, given the technical and logistical difficulty of developing cadaveric transplant programs, kidney transplantation is the most common transplantation performed in developing countries. In the developing world, transplantation of other solid organs is a new issue that has rekindled debate between national and international professionals and policy makers. The recent advent of segmental liver transplantation allowing for living related and non-related donation has pushed the issue even further in the direction of an ethical mandate.

Currently, there is no externally documented transplantation surgery being done in the Republic of Armenia. As economic development of this former Soviet Republic continues and as patients increasingly cross borders for life saving transplantation it is inevitable that Armenian surgeons will find it desirable and necessary to address the needs of their patients in their own country. Fortunate patients from Armenia who travel elsewhere for transplantation must eventually return home for follow-up. This group of patients has an extremely high mortality rate as they often do not receive proper immune system suppression therapy once they have returned to home. The development of indigenous transplantation programs with follow-up is therefore an ethical mandate for physicians who have no further therapy to offer their patients and a critical issue for patients themselves who will either die from lack of therapy or subject themselves to the serious and potentially life-threatening decision to travel abroad for transplantation. The commercialization of living non-related donor programs in other countries has slowed the development of native transplantation programs. (5)

Previous to the start of the project in 1998 the investigator was only able to document some limited pediatric transplantation activity. In reality there is a remarkable amount of transplantation surgery being done in the Republic of Armenia in the absence of legislation. This activity includes recent pediatric and adult renal transplantation being performed by Dr. Ara Babloyan, corneal transplantation with plans underway for the development of an eye bank, bone transplants from cadavers, and cadaveric skin transplantation. One surgeon was sent abroad to France in order to be able to provide liver transplantation. This January, Armenia saw the opening of the first bone marrow registry. This center will be equipped to do tissue typing and will serve as a national and regional registry that will contribute to international databases.

The development of renal transplantation programs follows a recognized pattern of establishment that has been outlined by Daar in 1991. He sites the following stages of evolution for all developing nations:

- 1) Performing transplantation in Europe and the US where doctors somehow obtain the necessary cadaveric organs.
- 2) Establishing indigenous living related transplant programs with the help of European and American doctors and other medical personnel.
- 3) Supplementing local living related transplants with imported cadaveric kidneys from established centers who were not able to use the organs due to damage or marginal status.
- 4) Continuing transplantation of patients abroad in the US and in Europe and where commercialized living non related organs are available.
- 5) Establishing local transplantation programs. (6)

Armenia appears to be at stage 2 in terms of its development. It lacks the wealth of the oil producing countries in the region and may therefore pass directly over step three and onto development of cadaveric programs.

1.2 Background and health status in Armenia

According to the United Nations Development Report from 1996 Armenia is a homogenous society with 96% ethnic Armenians, 1.8% Kurds, 1.2% Russians and 1.0% other. Until 1960 the population of Armenia was mainly rural. The balance has now shifted and over 2/3 of the general population live in urban areas. The population of Yerevan represents 1/3 of the overall population of Armenia. (7)

Religion Armenia adopted Christianity as the state religion in the year 301 AD. During the communist era people were encouraged to become atheist and could not speak openly about their religious beliefs. In this survey, 90.7% regarded themselves as Christian. The remainder of those surveyed said they were either atheist, had no religion or did not know their religion.

Education Public education in Armenia benefited greatly from 70 years of communism. Women and men have equal access to education. According to the last census of 1989, almost all adults have had at least primary education, 55.4% secondary and 16.1% post secondary or university.

According to the Reproductive Health Survey Report from 1997 from the Ministry of Health, Armenia is currently passing through one of the most important stages of its development as an independent state and is in the process of a difficult economic and social transition. The centrally planned economy is transforming into a market economy. The severe earthquake of 1988 that destroyed the Northern part of Armenia, the deterioration of the economy after the collapse of the ex-Soviet Union and the long term blockade by neighboring countries have led to severe social and economic crises. (8)

Armenia's current situation can be assessed by examining the indicators provided by the United Nations Development Program report for 2000.

Age Structure

0-14 years: 24% (male 415,297; female 400,590)

15-64 years: 66% (male 1,084,588; female 1,131,387)

65 years and over: 10% (male 129,890; female 182,584) (2000 est.)

Growth Rate Population: -0.28% (2000 est.)

Birth Rate: 10.97 births/1,000 population (2000 est.)

Death Rate: 9.53 deaths/1,000 population (2000 est.)

Current Net Migration rate: -4.23 migrant(s)/1,000 population (2000 est.)

Sex ratio:

at birth: 1.05 male(s)/female

under 15 years: 1.04 male(s)/female

15-64 years: 0.96 male(s)/female

65 years and over: 0.71 male(s)/female

total population: 0.95 male(s)/female (2000 est.)

Infant mortality rate: 41.48 deaths/1,000 live births (2000 est.)

Life expectancy at birth:

total population: 66.4 years

male: 61.98 years

female: 71.04 years (2000 est.)

According to the UNDP 2000 Report budget expenditures on health care in 1998 are estimated at 3,610 drams or about \$7 USD per capita. These make 1.4% of GDP (3.2% in the world on average). (9)

In accordance with the Government's decree of April 1999, a state-guaranteed free health care system is carried out under nine targeted state projects financed from the state budget.

The currently operative "Health Financing and Primary Health Care Development" project financially supported by the World Bank (WB) is designed to ensure adequate quality and accessibility of medical services. The World Health Organization (WHO) provided assistance to Armenia in developing a long-term health care program with the following objectives:

1. providing equitable medical services,
2. improving the population's health,
3. introducing a multi-segment strategy to ensure health care promotion,
4. launching an efficient system of medical aid,
5. overseeing and managing reforms in the health care sector,
6. protecting maternal and child health

Among the problems that have emerged in the health care infrastructure within the past decade is a medical system developed mostly according to market-regulated mechanisms, which has resulted in a drastic reduction of the state's regulatory role, unacceptably low access to medical aid, and a continual deterioration of the population's health on the whole. The elaboration of an obligatory state medical insurance policy aimed at improving the sector is currently underway. In the mean time, volunteer private insurance has been successfully introduced.

According to the WHO National Health Planning Program the following can be said about Armenia. As in most countries in such transition, health indicators show dramatic worsening in health status. Studies exploring the burden of diseases in Armenia show that the pattern of disease burden is more similar to developed industrialized countries than to developing countries. WHO targets the following in the national health policy program.

1. To develop a planned public health policy in order to reach prioritized national health targets.
2. To ensure that the direction of the changes and the reforms take place as a planned and predictable process.
3. To make the needs for allocations of national resources to the health sector transparent.
4. To establish mechanisms and forums for professional and public debate of health matters.

WHO sites a very active ongoing reform process in the health sector that necessitates planning in areas of policy, strategy, legislation, implementation, financing, education reform, and evaluation. (10)

1.3 Study Objectives

Public policy. This study will determine what provisions are currently in place in regards to transplantation and donation. Public policy needs to address:

- 1) The centralization of transplantation wait lists with the hope of a more equitable method of distribution.
- 2) The adequacy of the supply of organs to meet transplantation needs.

Public policy can address both of these issues by drafting and endorsing donor legislation if that legislation is nonexistent. It is also necessary to understand policy stance towards the financial responsibility of the state vis a vis the patient. Does the state currently pay for its citizens to travel abroad for transplantation? Is transplantation viewed as a luxury whose cost must be borne by the patient and their family or is it viewed as an

entitlement? Policy stance was ascertained by interview of Ministry of Health officials and survey of programs in existence.

Legislation. The project endeavors to ascertain if Armenia has adopted any donor legislation to date. Such legislation may include but is not limited to legislated death via either brain dead or heart death criteria, legal status and ownership of cadavers, sale of organs by non-related donors, the sale/purchase of organs across international borders, and the use of brokers or middlemen to set up foreign or domestic transplantation. Legal statutes, and any archived bills will be surveyed and translated into English for examination and discussion by the international transplant community. The official stance of the Armenian church is also examined within this context.

Professional and public opinion. Two surveys were administered in Armenian. One was administered to the general public, and a second survey was given to practicing physicians. The survey questions are derived from surveys previously administered in the United States in order to ascertain public opinion regarding organ transplantation and donation. Questions on both surveys address awareness of transplantation, attitudes toward death and donation, degree of willingness to donate, and financial considerations. In addition, the physician questionnaire will be used to ascertain technical knowledge and willingness to recommend donation to patients.

Public opinion. Organ donation in developing countries is limited by the attitudes of health care professionals as well as by the general public. A survey was conducted by oral interview using a questionnaire. The survey administered to the general public focused on the following issues: awareness of transplantation, willingness to donate one's own organs while alive, willingness to donate one's own organs after death, willingness to donate the organs of one's relative, willingness to donate organs to various members of

one's family, i.e. parents, siblings, children, spouse, and reasons for unwillingness to donate. The survey was carried out in the largest Armenian cities of Yerevan where one third of the country's population resides.

Using this survey method, barriers to transplantation have been identified in the United States related to lack of transplantation awareness, religious myths, distrust of the medical community, fear of premature declaration of death if the person is a known organ donor, etc. (11) Cultural barriers to transplantation are significant even in western countries where it is said that the taboos against dismembering dead bodies are more widespread than originally thought. (12) Results from this study are intended to be used to devise targeted public education campaigns that teach the importance of transplantation while also addressing the concerns of potential donors. In this way a steady supply of organs for donation will be assured should Armenia choose to pursue a transplantation program in the future.

Very little information is available from the Middle East and even less from Russia and the Former Soviet Republics regarding public attitudes towards transplantation. A survey conducted in Saudi Arabia on 1992 showed that 88% of the population accepted the idea of donation, 33% of the population studied had knowledge of brain death. 92% were aware that humans can live with only one kidney. Only 15% were aware that selling kidneys is prohibited by law. 88% were aware that Islam condones organ donation. (13)

Willingness of the public to donate is essential to the progress of a transplantation program. Teo states, "A government may legislate ethically sound transplant policies and commit the necessary resources to ensure the success of a transplant program, and it may be supported enthusiastically by the transplant community; but no program will ever succeed without generous public support through its willingness to donate organs." (14)

Professional opinion. Studies show that even when donors are willing to donate they are often not referred for donation due to the attitudes or lack of training of health care professionals. The First International Congress on Transplantation identified the need to survey doctors in order to understand their attitude toward transplantation as a priority issue in the establishment of transplantation programs. The survey used in this study was a standardised questionnaire that was elaborated upon. The survey focuses on the attitude of physicians toward transplantation and donation specifically in regards to the general beliefs, ethical issues, commercialism, knowledge of the importance of transplantation and knowledge of technical issues surrounding transplantation. The survey in this study was carried out in the largest Armenian city, Yerevan. Results from this study are intended to be used to devise targeted provider education modules that will emphasize the importance of universal referral for donation while also addressing the ethical and logistic concerns of Armenian physicians. Results from this study will also be used to ascertain how physicians make decisions regarding donation referral and will be used by departmental chiefs in decisions regarding blanket policies for donation referral and in offering ethical guidance to physicians within their departments.

Summary. Successful navigation of these four areas of possible barriers to implementation of transplantation programs will lead to a sufficient, timely, and life-saving supply of organs. Failure to address these issues can lead to undesirable commercialism (organ sales across international borders and from living non-related donors domestically), inequality in distribution of organs, unfair cost burden on patients, and ethical dilemmas for physicians with no alternatives to offer their patients. This type of interdisciplinary approach to development is necessary in order to strengthen the already powerful tool of medicine. No number of transplant surgeons or surgical units will be useful without a constant organ supply nor if procurement and distribution of

organs does not proceed in an ethical and legislated fashion supported by policy, public and professional opinion. We hope that the findings of this project would serve as the impetus for debate, dialogue, and collaboration between physicians and lawmakers, and policy officials within the Republic insuring that the data gathered will have long term sustainable results.

1.4 Methodology

Questionnaires. Two questionnaires were developed, one for the general public and one for the physician population. (Appendix I) The surveys were based on questions administered in the Partnership for Organ Donation/Gallup poll questionnaire administered to the American public 1993. Questions were selected based on their relevance in Armenia. (15) Translation into Eastern Armenian was undertaken by Meher Yepremyan YMS IV, a native speaker of Eastern Armenian. Every attempt was made to keep the translation close to the original meaning in order to preserve comparability of data. Additional questions were designed and drafted in order to assess support for organ donation legislation and in the case of the physician survey, in order to assess clinical knowledge of issues related to organ donation and transplantation. The questionnaire can be broken down into several main areas of interest: general demographic profile, sources of knowledge and information, attitudes and perceptions towards death, donation and transplantation, willingness to donate, and financial considerations.

Selection and training of interviewers. Four local research consultants were hired to administer the two surveys. All four research consultants were chosen from the American University of Armenia Department of Public Health. The interviewers chosen were given a strict protocol to follow to insure randomization of the sample as intended. (Appendix II) The interviewers were then trained during a four hour session to make them aware of common mistakes to be avoided. Role play was used to provide the surveyors with confidence and uniformity in administering the survey. They were then asked to pilot test the interview tools. The information gathered from the pilot test served to refine the language, appropriateness, and flow of the survey tool. Each interviewer was accompanied and observed by the principal investigator at the start of the survey process as well as during the pilot testing. Feedback was given immediately during and following

the observation period to insure standardization of the interviewers and to address common errors.

Sampling and randomization. One-third of the entire population of Armenia lives in Yerevan and the major institutes of medicine capable of carrying out the harvesting and transplantation of organs are all in Yerevan. We therefore chose to restrict our surveys to the residents of this city and the doctors of the major medical centers. Cluster sampling adopted from the United States CDC. (16) was chosen as the method of random sampling. Clusters in groups of households are selected from a list of all clusters and in each cluster a predetermined number of interviewees is selected at random. Cluster sampling is a useful method for large populations, populations spread out over a large geographic area or for whom few lists or estimates of the number of people are available.

The random samples was obtained as follows:

Public opinion survey. A list of the divisions and corresponding population of the city of Yerevan was obtained from the City Department of Health. These divisions are known as Hamiak or communities. We chose to do a cluster sample of fifty five clusters with seven respondents in each cluster for a total of three hundred and eighty five respondents. The number of clusters was prorated by the population of each community. (Appendix III) The mayor of each community was visited and given a letter of introduction from the Minister of Health. Each community was asked to provide a list from their housing offices of all streets and the building numbers on each street that fell into their jurisdiction. Streets were then chosen at random, in turn a street number from that street was chosen at random. Interviewers were then dispatched to that street address where they were asked to assess the number of floors in the building and choose one by random number using a random number table. Once that floor was reached they

were then asked to choose an apartment number randomly by random number table. Only one participant per household was chosen to be interviewed. In each household a list of occupants and their birthdays was made. The interviewee was chosen by selecting the household member with a birthday closest to the day of the interview. All residents age 18 years or older were included in the participant pool.

Enrollment of survey participants. Lists were provided in every hamaik with the exception of the Arabkir hamaik where considerable difficulty was encountered in relation to one public health physician who refused to provide a list on the grounds of objecting to organ transplantation and donation at a time. She felt that Armenia was vulnerable to abuse due to financial considerations and poverty. In Arabkir hamaik a random selection of starting points was made by fashioning a complete list of all streets within the jurisdiction of the hamaik, streets were chosen at random from the list. In order to determine a starting point, a taxi was taken from one end of the street to the other. The range of street numbers was chosen. We then picked a starting number from a random number table and the interviewers were then sent to their start points. Six clusters were chosen in this way. The Malatia-Sepastia hamaik was not able to provide a handwritten list due to lack of manpower so we used their original list kept in the office in order to generate our starting points.

Each interviewer proceeded to their assigned start point. If no one was home upon entering a household, the interviewers assured the members of the household that all responses and information regarding the household would be used only for the purpose of research and under no circumstances would identifying information be attached to the questionnaire. Interviewees were assured that responding to the questionnaire was in no way a consent for organ donation or a contract for future action or further questioning. Verbal consent was obtained before each interview was conducted. (Appendix II)

Respondents were asked to respond to the questions in private so that their answers were not heard or influenced by other members of the household. Interviewers would subsequently proceed to the next physically close apartment until the cluster was complete. Choices to turn left or right, or up or down stairs were determined by a coin toss. All starting point addresses and refusals were noted in the interviewers notebooks. Interviewers were instructed not to press for an interview once a refusal had been made. The refusal rate was approximately 20%.

Professional opinion survey. A list of all hospitals in Yerevan was compiled with the help of the UNICEF database. (17) This list included only hospitals with inpatient services. A decision was made to not include polyclinics or institutions without inpatient services as we wanted to ascertain the opinion of those physicians who are in a position to recruit potential donors. We chose to make a cluster sample of thirty clusters with seven respondents in each cluster. The clusters were chosen randomly using an interval determined by the overall number of physicians. The hospitals chosen were visited by the assigned interviewer. The Director of each hospital was approached and informed of the study. Each Director was given a copy of a letter of introduction written by the Minister of Health. The Directors were asked to provide a list of all departments in their hospital. A department was chosen by random number by the interviewer. The department head was then visited, informed of the survey, and asked to provide a list of all practicing attending physicians and residents in their department. One doctor was chosen at random as a starting point, from this list and was visited. All interviews were conducted in private to insure the confidentiality of the responses. Once that physician was interviewed the interviewer would proceed to the next physically close doctor and invite them to be interviewed. Interviewers were instructed to find the most physically close physician by flipping a coin to turn right or left of go up or down stairs. Once the

first physician was interviewed, the surveyors were not limited to that specific department. All refusals to participate were noted in a notebook kept by the interviewers. A total of two hundred and eleven surveys were completed in using this methodology. The refusal rate was approximately 9%.

All data was input into an Access database. The data was cleaned and was analyzed using SPSS. The chi-square test was used to show significance. The alpha level is the maximum probability of making a false positive error that the investigator is willing to accept. Usually the alpha level is set at a p-value of .05. This means that the investigator is willing to run a 5% risk of being in error when asserting that the two groups examined actually differ. P-values give the probability that the observed difference could have been obtained by chance alone. If p is equal to or less than .05 the difference is accepted as being a true difference.

Chapter II

Policy and Law

2.1 Policy and its reflection in legislation

Policy and the type of program that is adopted by any country must be based on firm ethical grounding. The four main principles discussed in regards to medical ethics are: the principle of autonomy, beneficence, nonmaleficence and the principle of justice. (18) The principle of justice can be viewed according to John Rawls as "the basic institutions of society should be arranged so that the least well off groups have their interests served." This suggests that health policies should be arranged to devote significant resources to the least well off even if it does not efficiently maximize the health payoff for the society as a whole. (19) Accordingly, laws in a given country vary according to the amount of autonomy given to the individual. Presumed consent forms the legal basis for many countries. All deceased are assumed to be organ donors unless they have given their express dissent prior to death or if their family refuses donation. This system is often referred to as opting out. Some view donation issues as a continuum from extreme autonomy to no autonomy. Gabel states that "the pattern of consent varies with time and that...given adequate time, most countries will eventually enact balanced presumed consent legislation." (20)

Presumed consent According to the Presumed Consent Subcommittee of the UNOS Ethics Committee, the Ethics of Presumed Consent are based on the following:

“a) **Efficiency is Good.** Increasing the supply of organs — that is, supply-side efficiency — is a worthwhile goal.

b) **Asking for Consent can be Cruel.** Presumed consent would obviate the need to ask the donor's family for consent at a time of family's painful grieving.

c) **Individual Conscience Can be Respected.** Presumed consent respects the principle of individual choice by giving objectors to organ donation an opportunity to empower their anti-donation preference.

d) **Individuals Owe Society the Effort to Register their Objection.** Individuals who object to organ donation should be burdened with the task of registering their preference to the public authorities because organ donation is, presumptively, socially desirable. The burden of communicating objection should be placed on objectors to organ donation.” (21)

Opposition to presumed consent is based on the following:

“a) There will be false positives, that is, persons who were 'presumed' to consent but who, in fact, objected to donation. Under a policy of "presumed consent," some individuals who do object to organ donation in principle will not register their preference with public authorities because of one of many factors. For instance, individuals on the margins of society might not learn of their option to register their refusal. Furthermore, individuals have differential access to the mechanism for registering refusal.

b) **Problems in Registering and Transmitting Objection Status.** The mechanism for registering and transmitting objection status is likely to be inadequate.

c) **Individual Autonomy Speaks to a Core Value.** Asking individuals to publicly express their objection to donation does not respect the individual's right not to choose. Individuals do not have a social duty to express an objection.

d) To Decide Whether to Consent is Not a Dichotomous Choice. Individuals should have the right to delegate the decision to family members. Presumed consent would authorize collection of organs of a non-objector who had trusted his family to make the decision.”

(22)

Other models: Several alternative systems have been proposed in order to address some of the reservations of systems based on presumed consent. These other models are routine salvaging and required response.

Routine salvaging as is best exemplified by France’s Good Samaritan Law, does not assume consent is needed. “It presupposes the subordination of the individual to the state-led national community.” The option to opt out can still be maintained in such a system however the approach to harvesting of the organs is much more aggressive than presumed consent that allows much room for refusal by families. (23)

Required response is a model that seeks to determine and register the preference of every single adult. Another form of determining preference could be the delegation of the decision to donate to the family or surrogate. Donation regarding preferences would be recorded in a National Donor Registry (NDR), a centralized database accessible by organ procurement organizations. These preferences will carry legal weight. As such the preference would have a greater impact on the decision of the family to honor the directives of the deceased. (24)

Other issues for public health policy on transplantation is to define the role of the state in supporting expenses associated with transplantation. Thus, it will be necessary to determine the provisions currently in place for sending patients out of the country for

transplantation with the hope of convincing public health officials that it is more economical and less life-threatening to patients to develop domestic transplantation programs. A second important issue for public health policy is to insure a sufficient supply of organs for transplantation. Policy can address these issues via commitment to strategies such as donation drives, and public education campaigns. Supply of organs can also be insured via a commitment of public health policy to advocating the above mentioned legislation to pave the way for transplantation programs. Third, the equitable distribution of the organs via established wait-lists is an essential responsibility of policy makers. This is especially true in a system that is so susceptible to abuses and distortions of equitable distribution. It is the investigator's intent to survey and document current policy as it pertains to the aforementioned issues. These findings will serve as catalysts for debate and for action hopefully serving as the basis for needed changes or additions to policy. These policies must be firmly in place well in advance of the anticipated need for organs.

Programs that can be developed can either be living donor programs or cadaveric programs. In general in the developing world living related donor programs have shown the most success. Countries more and more are considering tackling the logistical problems inherent in cadaveric programs.

Commercialism Another issue that public policy must grapple with is the issue of commercialism. Problems with commercialism have become widespread in India, and in some reports in Egypt and Iran. Daar outlines a framework for thinking of commercialism that gives a full spectrum of possible systems for living donation:

- 1) living related
- 2) emotionally related (i.e. spouse)
- 3) donation by altruistic strangers

4) rewarded gifting by strangers

5) rampant commercialism with middle men as brokers and hospitals for profit

6) criminally coerced donation.

Daar states that categories 1-3 are generally acceptable to most societies. Category 4 still is being hotly debated and categories 5 and 6 are generally deemed unacceptable by professionals the world over. (25) Legislation is essential in order to regulate what is acceptable in a given society.

Category 5 commercialization with subsequent travel across borders for transplantation causes inferior quality of medical care, deception and exploitation of donors and recipients, corruption of hospital and government officials, negative effects on the development of indigenous transplantation programs, and violation of moral and religious beliefs of a society. (26)

Some view sale of kidneys as acceptable, stating that "The best way to address such problems would be by regulation and perhaps a central purchasing system, to provide screening, counseling, reliable payment insurance and financial advice....There is much more scope for exploitation and abuse when a supply of desperately wanted goods is made illegal. It is, furthermore, not clear why it should be thought harder to police a legal trade than the present complete ban. (27) They site evidence that the western public is much less opposed to commercialism than are medical professionals. Such regulation would allow for government price setting, theoretically eliminating a black market and equitable distribution based on medical need. Some suggest that organs are not like other commodities in the marketplace. In order to satisfy ethical concerns, organs must be distributed according to medical criteria and not according to financial forces. One suggestion is to use a market approach on the supply side while still accomplishing the

demand side of the equation based on an ethically reasoned distribution system. This would minimize the “wealth inequality effect” on the distribution of organs while theoretically increasing supply. (28)

The Bellagio Task Force addressed the question of acceptability of sale of body parts by stating that the “sale of body parts is so widespread, that it is not self evident why solid organs should be excluded,. In many countries, blood, sperm and ova may be sold. So too, an international trade exists in cadaveric body parts for medical education and research and pharmaceutical companies purchase large quantities of tissue for commercial purposes. Other companies openly purchase and sell tissue such as dura mater and fascia lata.” (29) To resolve these issues the task force proposes that the international community should continue to ban living unrelated donor compensation but encourage rewarded gifting to families of cadaveric donors. As the situation can not be free of coercion, the Bellagio Task Force condemns such practices.

The fear that the most disadvantaged economically would be the ones to sell their organs first, means that such a system remains ethically distasteful to most. In the absence of an ability to closely monitor all transactions, it is preferable to the international community to ban such sales at this time. This would in effect cause a sort of “organ imperialism” with the developing world serving as an endless supply of organs to the needy wealthy. (30)

Public policy in Armenia. An exploration of the issues outlined above, revealed that public policy is virtually non-existent in Armenia in regards to transplantation and donation. Overall, the Ministry of Health and practicing physicians felt that the centralization of wait-lists was undesirable. Most physicians feel that decisions should be left to the discretion of the treating physicians and the directors of each individual

transplantation center. Currently, no wait-lists are being kept either centrally or at any of the hospital centers. In general, the Ministry of Health was conversant in all of the nuances surrounding transplantation and was particularly interested in the development of legislation as well as the prevention of potential abuses. In 1996 a basic health care package was put into effect by the government. This package provides no coverage for transplantation. In addition, the Ministry is not involved either logistically or financially in sending Armenia's citizens abroad for transplantation. If transplantation is to continue or to advance in Armenia it will be necessary to form a national system for organ procurement and for allocation. The idea of international organ exchange organizations is one that should be explored within the region. Larger and more diverse wait-lists optimize finding a match for transplantation and decrease waste of precious organs. Armenia must seek to optimize equity as well as efficiency. The strong national identities and age old conflicts within the region make organ sharing a daring and politically challenging task but one than should be approached for the sake of the patients in need. (31)

2.2 Legislative options

Cadaver donor legislation varies throughout the world. Most developing countries have adopted an “opt-in” system where the patient or the family have to consent to organ donation whereas many European countries have an “opt-out” system where all people are regarded as organ donors unless they specifically state otherwise. The “opt-out” system significantly increases the number of organs available. One ambition of the project is to ascertain if Armenia has adopted any donor legislation to date. If the legislation adopted thus far has established an “opt-in” system legislators and policy makers may want to change to an “opt-out” system once a public education campaign has been successfully undertaken. Every country must establish brain dead criteria as well as legal definitions of death. Other issues that must be addressed via legislation include the legal status and ownership of dead bodies, sale of organs by living non-related donors, the sale/purchase of organs across national borders, and the use of middlemen or brokers to set up foreign or domestic transplantations. In some cases it may be necessary to enact specific organ-transplant legislation where in other cases there may be laws not specific to organ donation already in place that govern transplantation. These laws must be examined to ascertain the possibility of cadaveric donation given their parameters. A failure to address these issues in advance may result in significant delays when it becomes desirable to start organ transplantation programs. In addition to possible legislative delays, in Muslim countries the progress of transplantation programs must also await study and rulings by religious scholars issued in the form of Fatwas or religious rulings. Armenia is a Christian country and although it is unlikely that clergy would become involved in such deliberations, the possibility will be examined. A thorough examination of current statutes will illuminate areas in need of legislative attention and thereby serve as a catalyst for addressing these issues before large scale transplantation programs are undertaken.

Cadaveric transplantation laws seek to address who has authority over the body of a deceased individual after death. Cohen states: “A necessary condition for the lifesaving uses of the organs of a human body after death is the permission of those who have the rightful authority over the body in question. Autonomous expressions of will regarding the posthumous disposition of one’s organs are most often not made while alive, and therefore, a decedent’s autonomous judgments are rarely known with certainty. After death, authority over the body is commonly thought to rest with the decedent’s family, who are likely to represent best the true will of the decedent.” (32)

According to the findings of the International forum for Transplantation ethics all laws of different countries can be divided into five areas. 1) Only with the expressed consent of the person lawfully in possession of the body and subject to expressed objection of the deceased or objection of the relatives, if available. 2) After the relatives have been informed of the intention to remove organs, but irrespective of their consent (except for that of the closest relative. 3) Once it has been ascertained that the relatives do not object. 4) Where the dead person has not expressed an objection, this is confirmed by the relatives and consent is then presumed. 5) Irrespective of the relatives’ views. (33) The argument against changing opting-in laws to opting-out laws is that public education campaigns and better systems for organ procurement at the hospital level might be able to decrease the gap between needed organ and those that are donated. Those who argue for presumed consent systems believe that is morally reprehensible to continue to support legislation that does not optimize the number of organs retrieved within acceptable ethical standards.

Changing to presumed consent laws has resulted in an increased number of organs to meet demand in three countries of note, Spain, Belgium and Austria. However, there were also

other measures put in place simultaneously making evaluation of one variable impossible. What is essential in order to make such a law ethically acceptable is that there is a system in place that allows those who object to register their objections. This aspect of a presumed consent law still poses many obstacles in a developing country. In Belgium dissent is tracked by computerized registry which is operated twenty four hours a day. Such high tech registries may still be out of the realm of possibility in countries such as Armenia. (34) Sadler states, "For presumed consent to work, it must provide watertight security for the right to object,...and ensure legal immunity for physicians, nurses, and hospitals who act in good faith." (35) Armenia does not seem equipped to fulfill these requirements at this juncture.

According to Cohen, around the world, legislation has gradually been introduced to regulate the transplant process and to protect donors. However, few countries have introduced legislation that comprehensively deals with organ or tissue donation by living or deceased donors. Most countries have introduced legislation to clarify the diagnosis of brain death and to control the consent process and the methods used to monitor the source and destination of donor organs and tissues. In general, legislation also aims to ensure that living donors are not coerced to donate, especially if they are minors or if they are mentally ill, and that neither donors nor physicians gain financially from donation. In addition, measures to prevent "transplant tourism" the movement of prospective donors and recipients to other countries are gradually being instituted. (36)

In the United States, the legal groundwork was laid in 1968 with the advent of the Uniform Anatomical Gift Act (UAGA). This law eventually passed in all 50 states allowed people to document a desire to donate their bodies for transplantation or medical research upon their death. This law reflects the American ideals of autonomy while relying on altruism as the basis for donation. This system is also known as opting-in. As

the demand for organs outstripped the supply we started to witness the advent of required request laws that required healthcare personnel to ask families to donate the organs of their deceased. The first required request law was passed in 1985. The organizational structure for organ transplantation was introduced on a national level with the National Organ Transplantation Act (NOTA) in 1984. NOTA set up a national registry of patients waiting for transplants. In 1986 all Medicare and Medicaid hospitals were required to formulate protocols to identify donors and report them to the procurement agencies. (37)

A key development in the diagnosis of brain death was the publication of the Harvard criteria. These criteria have formed the basis for legal death legislation the world over. Key items of the criteria include; (a) unresponsiveness to intensely noxious stimuli (unresponsive coma), (b) total absence of spontaneous breathing, (c) absence of brainstem and spinal reflexes, (d) absence of postural activity such as decerebration, and (e) a flat electroencephalogram (EEG). Hypothermia and the presence of CNS depressants such as barbiturates must be excluded. Finally, the clinical and EEG findings should be unchanged in a second evaluation at least 24 hours later. These criteria have been added to namely with the Minnesota criteria and there is still considerable debate over what constitutes adequate confirmation of brain dead status. (38)

Uniform Determination of Death Act (UDDA). The UDDA reads as follows: "An individual who has sustained either 1) irreversible cessation of circulatory and respiratory functions, or 2) irreversible cessation of all functions of the entire brain, including the brain stem, is dead. A determination of death must be made in accordance with accepted medical standards."

The President's Commission for the Study of Ethical Problems in Medicine and Ethical Issues in the Determination of Death sought to refine the criteria and various tests and examinations that should be performed in order to meet the criteria set forth in the Harvard Criteria using state of the art standards. (39)

The project endeavored to ascertain if Armenia had adopted any donor legislation to date. Such legislation may include but is not limited to legislated death via either brain dead or heart death criteria, legal status and ownership of cadavers, sale of organs by non-related donors, the sale/purchase of organs across international borders, and the use of brokers or middlemen to set up foreign or domestic transplantation. Legal statutes, and any archived bills will be surveyed and translated into English for examination and discussion by the international transplant community. The official stance of the Armenian church will also be examined within this context.

2.3 History of transplant legislation in Armenia

The Republic of Armenia is currently undergoing a process of extensive legislative reform. From the first days of independence, Armenia has made every effort to adopt new legislation, which is both compatible with the principles of market economy and with human rights. The Republic of Armenia has already undertaken the significant steps toward legislative reform adopting a new Civil Code, Civil Procedure and Criminal Procedure Code.

Role of government in the legislative process: According to the Government Plan of Legislative Activities, the specified ministry or department undertakes the elaboration of draft laws. Staff members of government write the concept of the draft law, then the draft law itself. The Draft Law is circulated through the government. In the case of positive feedback, the draft law is discussed during the government session, and then adopted as an official draft law and sent to the National Assembly.

Role of Parliament in the legislative process: The draft law is elaborated in the appropriate committee of the Parliament, e.g. Commission on Social Issues. In the case of positive response, the draft is placed on the agenda of the National Assembly. The draft law passes through a first reading. After the first reading, members of Parliament adopt the draft law usually by a simple majority. The draft law is then placed on the agenda for the second reading, passed, and adopted. The draft law is then sent to the President of the Republic of Armenia.

Role of the President in the legislative process: Within a 21 day period the President either signs the law or sends it back to the Parliament. Should the draft law be signed it

becomes the Law and is thus put into force either immediately or in a specified period of time.

The Committee on Health and Human Services was responsible for the drafting of criminal code pertaining to transplantation. A copy of that criminal code can be found below. This criminal code was introduced as part of the legislative reform of 1999 to be signed into effect on January 1, 1999. The code was not signed into effect at that time and underwent many revisions and delays until it finally passed this past December of 2000. This code makes reference to an existing law on transplantation however, that law exists only as a draft that has undergone many changes over the last several Ministers of Health. Members of the Committee on Health and Human services were eager to begin work on a draft that would define death using brain dead criteria, and that would prohibit trafficking in organs.

As Ministers have the prerogative to introduce law, committee members had contacted then Minister of Health, Gagik Stamboltsyan, to ask him to prepare such a blanket norm. Ex-Minister of Health, Dr. Ara Babloyan, a urologist and renal transplant surgeon informed our project the previous year that he had drafted a comprehensive law governing transplantation. After much debate and revision the bill was never adopted. The draft was tabled pending the adoption of more comprehensive laws governing health care. The previous draft of the law was secured and elaborated on by our project and the new Ministry under the direction of then Deputy Minister of Strategic Planning and Development, Sevag Avakian.

Previous Soviet law: Although legislation does not currently exist, Armenia does not operate in a vacuum. There are legal precedents and norms of behavior that follow prior Soviet legislation. That legislation is scant and may only exist as policy directives rather

than legislation enforced by a penal code. According to surgeons in the Department of Transplantation in Latvia, the Soviet Ministry of Health issued the following instructions: "The dead body was considered state property and questions of explantation of kidneys were solved by reanimatologists and the transplantation team. Attitude and opinion of the deceased and his family were ignored." (40) Dr. Malayan of the Ophthalmologic Institute reports that he does about 70-80 corneal transplants per year. In the absence of current legislation he stated that he currently operates under what he considers to be the Soviet law as it was provided by the Armenian Ministry of Health. No confirmatory information was found on this law. The law reads as follows:

"If the family is agreement you may take the organs without any prior consent by the donor. If there is no family you must wait 24 hours before you can harvest the organs. The body cannot be evidence in a criminal investigation, cannot have cancer or any other diseases bloodborne or otherwise."

Under this "law" sales of organs are not prohibited and the infrastructure for transplantation remains noticeably unaddressed. Dr. Malayan worked with Dr. Babloyan to introduce the draft law to the National Assembly in 1996 due to his concern over operating without any legislated guidelines. He hopes to establish an eye bank once new legislation is passed.

The following is the translation of the draft of the Organ Transplantation Law as it was introduced in Parliament in September of 1998.

The Law of the Republic of Armenia on the transplantation of organs and/or tissues

This law states the conditions and rules of human organs and tissues based on achievements of contemporaneous science and medical practice, also taking into consideration the recommendations of the World Health Organization. The transplantation of human organs and/or tissues is the way of saving people's lives and the means of restoring health. This law should be implemented by the legislation of the Republic of Armenia by maintaining person's rights and should be in agreement with proclaimed humanistic principles of the international community.

SECTION 1 General Postulates

Article 1 The conditions and procedures for the transplantation of human organs and/or tissues

The transplantation of human organs and/or tissues from a living donor or cadaver may be carried out only in cases where other medical intervention cannot guarantee the saving of life of the patient or the restoration of health.

The removal of human organs and/or tissues from living donors shall be permissible only in cases where, according to the findings of a committee of medical specialists, his health will suffer no significant damage.

The transplantation of human organs and/or tissues is permitted solely by the consent of the living donor, and, as rule, with the consent of the recipient.

Human organs and/or tissues may not be bought or sold. The selling and buying of human organs and/or tissues as well the advertising of such activities are subject to penal code.

Operations to transplant organs and/or tissues in recipients shall be carried out on the basis of medical indications, in accordance with the general rules governing the conduct of surgical operations.

Article 2 List of human organs and/or tissues that may be transplanted

Transplantable organs can be: heart, lung, kidney, liver, bone marrow and other organs or tissues included on a list established by the Ministry of Health of Republic of Armenia.

This provisions of this law shall not apply to organs, parts of organs and tissues that are associated with human reproductive processes including testicles, embryos, ovum, sperm, nor to blood or blood products.

Article 3 Restrictions on the selection of living donors

The transplantation of human organs and/or tissues is not allowed for living donors under 18, other than in the case of bone marrow or those duly recognized as unable to function.

The removal of human organs and/or tissues is not permitted when it established that they belong to person who suffers from a disease which constitutes a threat to the recipient's life or health.

The harvesting of organs and/or tissues for transplantation is not permitted from a person who are dependent on the recipient.

The coercion of a living donor to agree to the harvesting of human organs and/or tissues is subject to criminal code according to the legislation of the Republic of Armenia.

Article 4 Health establishments engaging in the collection, preservation, and transplantation of human organs and/or tissues

The harvesting of human organs and/or tissues and preservation of the organs and/or tissues may only be done in State Health Facilities.

The transplantation of human organs and/or tissues is authorized only in specialized Health establishments.

The list of health establishments engaging in the collection, preservation, and transplantation of human organs and/or tissues and the regulations concerning their activities shall be drawn up by the Ministry of Health of the Republic of Armenia.

Article 5 The medical determination of the necessity of human organs and/or transplantation

The medical determination of the necessity of human organs and/or tissues for transplantation is made a committee of physicians of the health establishments concerned; this group shall include, the attending physician, a surgeon, an anesthesiologist, and other medical specialists as necessary on the basis of instruction to be issued by the Ministry of Health of Republic of Armenia.

Article 6 The consent of the recipient to the transplantation of human organs and/or tissues.

The transplantation of human organs and/or tissues shall be carried out with the written consent of the patient. In addition, the recipient should be warned of possible health

complications connected to the intended surgical intervention. If the patient is under 18 years of age or is considered duly incompetent, then said transplantation is carried out only with the written consent of his/her parents or legal guardian.

The transplantation of human organs and/or tissues is carried out without the patients agreement only in exceptional cases when delay of the intervention will endanger the patients life and it is impossible to obtain consent.

Article 7 Validity of international agreements

In the event that an international agreement to which the Republic of Armenia is a party lays down rules different from those laid down in this Law, the rules contained in the international agreement shall prevail.

Section 2

The harvesting of organs and or tissues from cadavers for transplantation

Article 8 Presumed consent to organ and/or tissue removal

The harvesting of organs and/or tissue from cadavers for the transplantation is prohibited when at the moment of the harvesting, the health facility becomes aware of opposition of this person during the period that they were alive or opposition of his/her close relatives or legal representative to allow harvesting of his/her organs and/or tissues for transplantation after their death.

Article 9 Determination of time of death

The harvesting of organs and/or tissues from cadavers for transplantation can be carried out if there are undebatable proofs of a patients death as ascertained by a committee of medical specialists.

The determination of death is governed according to confirmation of irreversible brain death based on criteria approved by the Ministry of Health of the Republic of Armenia.

No transplantation specialist and no member of the team working for the organ donation service and remunerated by the aforementioned service may participate in the diagnosis of death in cases where the use of the deceased person as a donor is envisaged.

Article 10 Authorization for organ and/or tissue removal from a cadaver.

The harvesting of human organs and/or tissues from cadavers is done only by permission of a chief doctor of a health establishment and in compliance with the requirements laid down by this law.

In the event where a forensic-medical expert appraisal is required, authorization to remove organs and/or tissues from a cadaver must likewise be obtained from the expert in forensic medicine, with appropriate notification thereof to the Public Prosecutor.

Section 3

Removal of organs and/or tissues for transplantation from living donors.

Article 11 The conditions for the removal of organs and/or tissues from a living donor for transplantation shall be authorized subject to compliance with the following conditions.

- If a donor is notified about probable complications for his/her health and future surgical interventions for harvesting organs and/or tissues.
- If a donor has given his free and informed consent in writing to the removal of his/her organs and/or tissues.
- If a donor has undergone a comprehensive medical examination and there is a conclusion of medical consensus as to the possibility of removal of his organs and/or tissues.

The harvesting of human organs and/or tissues from living donors is permitted if he/she is genetically related except for cases of bone marrow transplantation.

Article 12 Rights of the donor

Any donor who has expressed consent to the transplantation of his organs and/or tissues shall be entitled to seek full information from the health establishment about possible complications related to the operation to remove his organs.

He has the right to receive free treatment including medications in health establishment for conditions associated with the operations he has undergone.

Article 13 Restrictions on the transplantation of organs and/or tissues from living donors.

It is possible to harvest paired organs, a part of an organ, or a tissue whose absence does not entail any irreversible damage to health may be removed from a living donor for transplantation purposes.

Section 4

Liability of health establishments and their staff

Responsibility for prohibiting the spread of information concerning donors and recipients.

It shall be prohibited for physicians and other staff members to spread information concerning donors and recipients. The divulgence of such information is subject to criminal code by the legislation of the Republic of Armenia.

Article 15 Prohibition on the sale of human organs and/or tissues

Health establishments authorized to engage in operations for the collection and preparation of organs and/or tissues from cadavers shall be prohibited from selling them.

This law does not apply to preparations and transplant materials for the preparation of which tissue components are used.

Article 16 Liability of the health establishment

If the health of the donor or recipient has been damaged as a result of failure to comply with the conditions and procedures for transplantation provided for by the law, the health establishment shall incur material liability towards the above mentioned persons, in accordance with the procedures laid down by the legislation of the Republic of Armenia.

The following is a translation of the criminal code as it pertains to organ transplantation:

Criminal Code:

Article 133. Violating Rules of Transplantation Surgery

1. Violating the terms and procedure of transplantation law on removing parts of the body or tissues of a person which has carelessly caused a heavy or medium damage to the donor or recipient person of parts of the body or tissues – is punishable by imprisonment for a term of up to three years.
2. The same action which has carelessly caused the death of the sufferer - is punishable by imprisonment for a term of up to five years.

Article 134. Coercion to Giving Parts of the Body or Tissues

1. Coercing a person to give the parts of the body of that person for transplantation by using violence or threat of using violence - is punishable by imprisonment for a term of up to four years, with deprivation of the right to occupy certain positions, or to engage in certain activity for a term of up to three years or without it.
2. The same action, performed:
 - 1) in relation to a person in an obviously helpless state;
 - 2) in relation to a person in material or other dependence from the offender;
 - 3) in relation to an obvious minor –is punishable by imprisonment for a term of two to five years, with deprivation of the right to occupy certain positions, or to engage in certain activity for a term of up to three years or without it.
2. Action provided in part one or part two of this Article performed by an organized group - is punishable by imprisonment for a term of four to ten years and was responsible for taking care of that person, or the offender himself had put the person in a situation dangerous for life -is punishable by a fine in the amount of fifty to one hundred times the amount of the minimum salary, or by arrest for a term of up to three months.

2.4 Legislative efforts of neighboring countries

The legislation of transplantation activities of neighboring countries is important in terms of planning regional cooperation as well as in understanding the beliefs of a country as they are reflected in the national legislation.

Turkey. Legislation in neighboring Turkey is as follows: Law 2238 (Section 3, Article 11) states that medical death is decided by a team of doctors, (one neurosurgeon, one neurologist, one cardiologist, and one anesthesiologist) under the laws and methods of science adopted by the country. Law 2594 (January 1982) is an amendment to Article 14 of law 2238 and allows organ procurement from accident victims and victims of natural disasters in the absence of a family member present to decide, i.e. a presumed consent law. (41) The law also prohibits trading in organs and tissues.

Georgia. The following text is the English translation of Sections 114 to 122 of legislation which deal with various aspects of organ transplantation enacted in Georgia on December 10, 1997. The law is essentially an opt-in law that requires that family members be notified and give their consent before organs are harvested from a deceased individual. (42)

Chapter XX: Removal and use of human organs, or tissues (Secs. 114-122).

"114. The donation of human organs, parts of organs, or tissues (hereinafter referred to as 'organs') by a person during his lifetime or after his death for the purposes, treatment, scientific research, or education shall be a voluntary act.

115. Every Georgian citizen shall have the right to declare in writing his consent or refusal to the donation of organs during his lifetime or after his death. The declaration of his consent shall not be acceptable unless its author is competent. It shall not be permitted to use any form of influence on a person with a view to making him decide to donate organs.

116. The use of an organ from a living donor for the purposes of the treatment of another person/and or transplantation shall only be permitted if the donor and the recipient are genetically related or if they are married to each other.

117. (1) The removal of bone marrow from a living donor (with the exception of infants) for the purposes of transplantation into another person shall only be permitted in the following cases:

1. the removal of bone marrow will not adversely affect the health of the donor, a fact that must be confirmed by two properly licensed physicians acting independently of each other; and

2. the bone marrow is intended for transplantation into a genetic relative of the donor of the first or second degree whose state of health is critical and there are no other means of treatment.

(2) In the cases referred to in 1 and 2 of subsection 1 of this Section, the informed consent of the minor, his parent or parents, or his legal representative (if the minor is a homeless orphan) shall be mandatory. The consent shall be confirmed by a guardianship body.

118. If, in accordance with the accepted medical standards, a deceased person is a suitable candidate for the removal of organs for the purposes of transplantation, without having declared his consent or refusal to organ donation, and if there is no reason to assume that the distribution of his organs would be contrary to his religious convictions or ethical principles, organ removal shall be admissible only with the consent of a member of the family or the legal representative of the deceased. If it is not possible to contact these persons, the removal of organs from a cadaver shall be prohibited.

119. The removal of organs from a deceased person shall be authorized only after his death has been determined by two or more independent physicians who are not involved in the transplantation procedure. Death shall be determined in accordance with modern methods and criteria that conform to the ethical rules and professional standards approved by the health care bodies and professional associations of physicians of Georgia.

120. The selection of organs for recipients shall be made anonymously and only on the basis of medical indications, to the exclusion of any privilege.

121. Organs intended for transplantation or to be used for the purposes of treatment may not be the object of commercial transactions or exported or purchased abroad in violation of Georgian legislation and/or international treaties. Medical personnel shall not participate in the removal or use of an organ if they know or have reason to believe that the organ concerned has been removed as part of a commercial transaction.

122. It shall be prohibited to advertise the need for organs or their availability for profit-making

purposes. No person or establishment participating in organ transplantation may receive remuneration in excess of the amount justified by the services provided."

Iran. The following outlines the legislation set forth by the Iranian Islamic Majlis (parliament) on May, 23 2000. The law in Iran also depends on the permission of the next of kin as the determining decision. The law does not presume consent of the deceased.

Law pertaining to transplantation from cadavers or from patients declared brain dead in Hospitals with capability to carry out transplantation, after receiving permission from the Ministry of Health and Medical Education, can transplant body parts from cadavers or patients declared brain dead by certified experts, to patients whose life depends on such transplantation, conditional on the agreement of the guardian of the deceased.

1. Diagnosis of brain death is made by experts in government hospitals with capability for transplantation. These experts will be appointed by the Minister of Health and Medical Education for a 4-year period.

2. Members of the Committee of Experts can not be members of the transplant team.

3. If the diseased body is harmed otherwise, the transplant team is responsible to pay for such injuries to the family of the deceased. The implementary details of this law will be completed by the Ministry of Health and Medical Education with input from Iranian Islamic Medical Association and Foundation for Special Diseases in three months from this date and approved by the cabinet. (Personal Communication. Translated by Dr. Asghar Rastegar January, 2001)

Azerbaijan. No information on legislation in the ex-Soviet Republic of Azerbaijan was made available to the international community.

Russia. Although Russia is not a neighboring country, its close ties to Armenia make it an important country in terms of development of regional organ transplantation programs. The legislation in place in Russia is extremely close to the Armenian draft and it served as the model for the Armenian legislation. There is no need to reproduce the law here since it is essentially the same as the Armenian draft. The Russian law is an opt-out law.

2.5 Role of religion in law and society

Law is a reflection of the ethics and beliefs of the people it seeks to regulate and protect. Along these lines, religious considerations are often cited as barriers to transplantation and donation in developing countries but some experts regard these constraints as "more imagined than real." (43) Armenia is a Christian nation which lies at both a cultural and a religious crossroads. In addition with the sovietization of society during 70 years of communism it was quite unclear what the perception would be among Armenians as to both the reliance on church teachings and the perception of where the church stands on these rather technical issues. In general, with some dissent by select religious leaders, all three monotheistic religions of Judaism, Islam and Christianity seem to support organ transplantation.

In order to give a flavor of some of the religious teachings of three major religions an outline of the major areas of belief follow. Jewish law has some immutable tenets but also leaves room for modern debate and interpretation of these tenets within the framework of religious law or halakah. Daar sites three major areas of concern of the religious authorities of Judaism. First, prohibition of desecration of the body after death, second,

prohibition against benefiting in any way from a corpse, third obligation to provide a full burial for the corpse. The 613th commandment of Judaism is to save life. It takes precedence over all commandments except three, worship of god, adultery or killing or taking the life of one person to save another. (44) This emphasizes the need for a clear interpretation of the moment of death in that no person's life should be taken to save the life of another. This stipulation was the root of much debate over the criteria for brain death. The declaration of brain death was eventually adopted by the Chief Rabbinate of Israel with some additions to the Harvard criteria to insure that there is no violation of Judaic law. In Israel this has meant an obligation (mizveh) to donate one's organs as opposed to a permission to do so. Israeli law has therefore more approximated an opt-out system than an opt-in system. The right of the family to object is preserved. On the issue of living donors Jewish law is clear that there is no obligation to consent and that all request must be made without elements of coercion. Religious law mandates that the donor not put him/herself in danger. The risk to the donor must be judged to be minimal. (45).

Christianity views the person as made of both body and soul together. Due to the belief that the body should be resurrected in the future, the cadaver must be handled with "respect, care and ritual" (46). The integrity of the body is not considered essential but respect for the cadaver and all of it's organs is. Donation is viewed as a charitable event that approaches almost divine sacrifice. The concept of brain death was accepted by the Pope in 1957 and is supported by the Christian belief that the soul has departed from the body at the moment of death. The support of organ transplantation was reaffirmed by Pope John Paul in 1991.

Islam believes that everything including man's body belongs to God in the end. There is an emphasis on good health and medical treatment is viewed not only as a right but as an

obligation. Like Jewish law, Islamic law has a permanent framework or the Qur'an and other writings and also room for debate and consensus in order to allow for flexibility throughout time. The official ruling is issued in a Fatwah or religious ruling. Fatwas in recent time have not been consistent from Imam to Imam and have sometimes been in conflict with secular law thus creating confusion among religious Muslims. Islam teaches that it is wrong to tamper with the body after death and many religious leaders object to donation on these grounds. (47) Those who agree with transplantation do so under these guiding principles of Islam,

- 1) Everything is permissible unless it is stated otherwise
- 2) Any well intentioned act that is safe, of benefit to mankind, and does not harm others is viewed favorable unless it violates other teachings of Islam
- 3) Respect of Man: Cure of a disease is mandated in order to restore the dignity of the individual
- 4) Respect for the dead the act of donation does not defile the dead but is viewed as a very positive
- 5) Justifiable exceptions occur for established rules i.e. to save a life
- 6) The principle of choosing the lesser evil when one is faced with two evils
- 7) Everything belongs to God including the body. (48)

Similar to Jewish law, Sharyanic or Islamic law has been interpreted so that engaging in donation of a body part while living is seen as acceptable as long as it “would not lead to intentionally wounding oneself or forfeiting one’s life to save another.” Jurists have ruled that the organ would need to be buried separately should the recipient decide to cremate his/her body after death in order to fulfill Islamic law. (49) Islamic law strictly forbids the sale of organs but accepts the gift of an organ as life-saving and therefore of great benefit to humanity.

There has been somewhat inconsistent support of brain death criteria as well but much work is being done in order to standardize the religious rulings. Brain death was accepted by the Islamic Jurists in 1986. Their ruling states: "A person is considered legally dead when one of the following signs is established, 1) Complete stoppage of the heart and breathing and doctors decide that it is irreversible or 2) complete stoppage of all the vital functions of the brain and the doctors decide that it is irreversible and the brain has started to degenerate." (50) There seem to be many variations by country and perhaps even within the same country. Daar sites some of the more progressive rulings in Kuwait, Egypt, Saudi Arabia and Jordan as supportive of transplantation. Barriers to transplantation in Islam appear to be due more to lack of public knowledge of religious rulings than to the Fatwas themselves. (51)

Most fears of religious disapproval of transplantation come from the experience in Japan where the Shinto religion poses a significant cultural barrier to transplantation. The belief of Shinto is that purity is of the utmost importance. The dead body is considered entirely impure and as such unsuitable for handling much less transplantation. In addition, there is a system of deification of ancestors or theanthropy which make it unacceptable to tamper with the remains of the person. To do so would cause the deceased to exist in a state of tortured existence and bring great misfortune to the family. Great difficulties have been encountered in Japan in terms of developing successful transplantation programs. Even when permission to donate is given, the family will often reverse the decision of the individual. (52)

Xenografting of the transplantation of organ from one species to another is gaining popularity as the next frontier in the developing world. Such programs could allow for planned operations and eliminate the need for development of extensive cadaveric

programs. There are no objections from the three major religions in the transplantation of organs from one species to the other. Judaism and Islam which forbid the raising or consumption of pigs are supportive of the idea of xenotransplantation mostly due to the desire to preserve human life above all else. (53) This is commonly known as necessity overruling prohibition. (54)

2.6 Position of the Armenian Church

Armenians by and large consider themselves to be members of the Armenian Orthodox church. The center of church activity is the Mother Church at Etchmiadzin. The Armenian church elects a Catholicos for a life-term. The Catholicos serves as the head of the church and as such deliberates and decides issues of policy. The question of organ donation was one put to the last Catholicos (Karekin I) by Drs. Babloyan and Malayan. No official statement had been issued by the church on this issue however, the former Catholicos did express the church's approval of transplantation and organ donation as charitable and laudable acts. Our project has contacted the Office of the Catholicos Karekin II at Etchmiadzin and asked for a ruling and policy statement on the issue of transplantation. All information obtained from our surveys and research will be provided to the church in an effort to secure their prompt ruling and approval. The role of the church in the thoughts of Armenians is powerful and their approval will be a major victory and support in the favor of on-going developments.

2.7 Future directions

Armenia is currently undergoing extensive legislative reform. Organ transplantation law has not been highlighted as a priority legislation. The criminal code is scheduled to be accepted this session. The criminal code will be somewhat hollow however, as it will

refer back to a non-existent Transplantation Law. In addition, it appears that the criminal code does not set forth any penalties for those found guilty of trafficking in human organs and tissues even though this article is set forth the drafted law. This makes the prohibition of sale of organ and tissues remarkably powerless.

Chapter III

General Public Survey

3.1 Public barriers: summary

In 1993 the Partnership for Organ Donation commissioned the Gallup organization to conduct a survey in the American public that would examine attitudes and perceptions regarding organ donation. The results of that survey were published. The Partnership for Organ Donation has made the results and the methodology, including the survey tool available to the public and the international transplantation community. Many of the questions in our survey were taken from the 1993 survey and translated into appropriate Armenian. In addition, several questions were added to strengthen areas that were of added interest to our study. The survey method used by the Partnership for Organ Donation varies greatly from that used in our study. Their survey was conducted by phone using a random sampling scheme based on a random digit procedure. In addition, the Partnership conducted a minority supplement in order to be able to analyze results according to race. As many variables together interact to produce responses, it is important to look at the responses as descriptive in nature. The sampling error for this survey is +/- 5%. The results of this survey will be compared to the results of the American survey wherever applicable and also to the results of the survey administered to the physicians with the professional survey. Mean scores are reported for questions by assigning the following values to responses: 4=agree, 3=agree somewhat, 2=disagree somewhat, 1=disagree.

3.2 Results and discussion of the general public survey: Includes comparison with American data

Overall profile of the survey is as follows:

Total	n=388	
Gender		
Male	n=128	33.2%
Female	n=258	66.8%
Age		
50 and under	n=282	72.7%
51 and over	n=106	27.3%
Education		
High School or less	n=141	36.9%
Some technical school or undergraduate university	n=115	30.1%
Some post graduate university	n=126	33.0%

These tables may contain numbers that do not total with precision due to minimal missing responses that are not listed separately for the purposes of this study.

In the past have you ever read, heard, or seen any information about organ donation?

	Yes	No
Total: (n=388)	83.5%	16.5%
Gender		
Male (n=128)	82.0%	18.0%
Female (n=258)	84.1%	15.9%
Age		
50 and under (n=282)	87.2%	12.8%
51 and over (n=106)	73.6%	26.4%
Education		
High School or less (n=141)	66.7%	33.3%
Some technical school or undergraduate university (n=115)	91.3%	8.7%
Some post graduate university (n=126)	95.2%	4.8%

There appears to be no significant difference in awareness of organ donation between men and women. The p-value was .605.

Age of 51+ corresponds with a decreasing awareness of organ donation compared with the age group of 50 and younger. Indicating that the general trend is decreasing awareness of donation with increasing age. The p-value for this analysis is .001.

Of those who had not heard of organ donation, 74.6% were category 1 for education, 15.9% were category two and 9.5% were category three. The data indicates, as expected, that the greater the education level, the greater the awareness of organ transplantation. The p-value for this analysis was significant at $p = .001$.

What was the source of the information?

The most frequently cited sources were:

Television: 190 mentions
Conversations/friends/relatives/neighbors: 57 mentions
Press/Mass Media: 54 mentions
Newspapers: 40 mentions
Film/movies: 37 mentions
Magazines: 13 mentions
Books: 12 mentions
Radio: 11 mentions
Scientific materials: 10 mentions
From ill friends and relatives: 7 mentions
From the hospital/physicians: 4 mentions
From the USA/abroad: 4 mentions
Related to profession: 3 mentions

A few interesting responses regarding how the interviewees were made aware of donation were, “My mother was a donor”, “I had a relative transplanted in India.”, “ From a private experience”, and from “an announcement on a building”. Anecdotally, we heard many responses praising a Russian film that aired on TV. The film was about a small boy who suffers from kidney failure that requires a transplantation. This may explain the high number of mentions for the television.

Would you agree with a new law which would legalize organ donation for transplantation after death?

	Yes	No	Don't Know
Total: (n=388)	70.4%	12.5%	17.1%
Gender			
Male (n=128)	67.2%	16.4%	16.4%
Female (n=258)	71.8%	10.6%	17.6%
Age			
50 and under (n=282)	74.3%	10.7%	15.0%
51 and over (n=106)	60.0%	17.1%	22.9%
Education			
High School or less (n=141)	66.0%	8.5%	25.5%
Some technical school or undergraduate university (n=115)	67.0%	16.1%	17.0%
Some post graduate university (n=126)	79.4%	14.3%	6.4%

Armenians overwhelmingly are supportive of a law that would legalize donation with a positive response of 70.4%.

There appears to be no significant difference noted in an analysis looking at male vs. female support for such an initiative.

Support for such a law does vary however by age and by educational status. The 51+ age group appears less supportive of such a measure with a statistically significant p-value of .024 between the two age groups.

When the analysis is performed by different educational levels there appears to be an increase in support based with higher educational levels. A statistically significant p-value was noted at .001.

**Please rate the following sources of information by level of
trustworthiness**

Government

	Very Trustworthy	Trustworthy	Non- Trustworthy	Don't Know	No Basis to Judge
Total: (n=388)	1.8%	27.6%	54.9%	7.2%	8.5%
Gender					
Male (n=128)	1.6%	20.3%	60.9%	10.2%	7.0%
Female (n=258)	1.6%	31.0%	52.3%	5.8%	9.3%
Age					
50 and under (n=282)	2.5%	28.0%	52.1%	7.1%	10.3%
51 and over (n=106)	0.0%	26.4%	62.3%	7.5%	3.8%
Education					
High School or less (n=141)	1.4%	27.7%	55.3%	4.3%	11.3%
Some technical school or undergraduate university (n=115)	1.7%	27.0%	58.3%	7.8%	5.2%
Some post graduate university (n=126)	2.4%	27.8%	50.8%	10.3%	8.7%

In general, the public does not seem to view the government as a trustworthy source of information with 29.4% of the population surveyed rating the government as very trustworthy or trustworthy and 54.9% rating it as untrustworthy.

Analyses by gender, age or educational level do not reveal a significant variation in opinion regarding the trustworthiness of the government as a source of information. The p-values are .114, .091, and .522 respectively. It is interesting to note that in the older age group not one respondent named the government as a very trustworthy source of information.

TV/Radio

	Very Trustworthy	Trustworthy	Non-Trustworthy	Don't Know	No Basis to Judge
Total: (n=388)	1.8%	45.2%	42.9%	5.2%	4.9%
Gender					
Male (n=128)	0.8%	34.6%	49.6%	9.4%	5.5%
Female (n=258)	1.9%	50.8%	39.5%	3.1%	4.6%
Age					
50 and under (n=282)	2.5%	46.6%	39.9%	5.0%	6.0%
51 and over (n=106)	0.0%	41.5%	50.9%	5.7%	1.9%
Education					
High School or less (n=141)	1.4%	39.7%	48.2%	2.8%	7.8%
Some technical school or undergraduate university (n=115)	1.7%	40.9%	46.1%	7.8%	3.5%
Some post graduate university (n=126)	2.4%	55.2%	33.6%	5.6%	3.2%

TV and radio seem to earn more trust from the general public than does the government with 47% rating the sources as very trustworthy or trustworthy. Still, 42.9% rates TV/radio as an untrustworthy source of information. These media were traditionally state run entities and it is understandable that the public may remain skeptical.

Analysis by gender reveals a difference in how this source of information is viewed. Females seem to place more trust in TV/radio as a source of truthful information. With 52.7% naming TV/radio as very trustworthy or trustworthy and 39.5% as untrustworthy. The male population surveyed 35.4% viewed the source as very trustworthy or trustworthy and 49.6% as untrustworthy. This seems to suggest a lack of trust within the male population surveyed vs. the female population surveyed. The p-value for this analysis was .006.

Analyses by age or educational level do not reveal a significant variation in opinion regarding the trustworthiness of the TV/radio as a source of information. The analysis by education does reveal a trend towards viewing the source as more trustworthy with increasing education. The p-values are .089 and .061 respectively.

Doctors

	Very Trustworthy	Trustworthy	Non-Trustworthy	Don't Know	No Basis to Judge
Total: (n=388)	9.3%	58.4%	23.5%	3.9%	4.9%
Gender					
Male (n=128)	7.9%	61.4%	19.7%	3.9%	7.1%
Female (n=258)	9.7%	57.4%	25.2%	3.9%	3.9%
Age					
50 and under (n=282)	10.7%	60.1%	19.6%	4.3%	5.3%
51 and over (n=106)	5.7%	53.8%	34.0%	2.8%	3.8%
Education					
High School or less (n=141)	7.8%	48.9%	31.2%	5.7%	6.4%
Some technical school or undergraduate university (n=115)	10.4%	58.3%	22.6%	2.6%	6.1%
Some post graduate university (n=126)	10.4%	68.8%	15.2%	3.2%	2.4%

Doctors seem to earn more trust from the general public than does both the government or TV/radio with 68.2% rating doctors as either very trustworthy or trustworthy. Only 23.5% rates doctors as an untrustworthy source of information. Of the four sources quoted doctors seem to enjoy the position of being the most trustworthy source of information.

Analysis by gender does not reveal a difference in how this source of information is viewed. The p-value for this analysis was .489.

Analyses by age or educational level do reveal a statistically significant variation in opinion regarding the trustworthiness of the doctors as a source of information. The analysis by age reveals a trend towards increasing trust in the younger age group and increasing mistrust in the older age group.

An analysis by education reveals a trend towards viewing the source as more trustworthy with increasing education. The p-values are .037 and .033 respectively.

Church

	Very Trustworthy	Trustworthy	Non-Trustworthy	Don't Know	No Basis to Judge
Total: (n=388)	9.3%	50.3%	15.2%	13.1%	12.1%
Gender					
Male (n=128)	7.8%	53.9%	15.6%	10.2%	12.5%
Female (n=258)	9.7%	48.8%	15.1%	14.3%	12.0%
Age					
50 and under (n=282)	9.2%	48.2%	14.9%	14.2%	13.5%
51 and over (n=106)	9.4%	55.7%	16.0%	10.4%	8.5%
Education					
High School or less (n=141)	14.9%	54.6%	12.8%	10.6%	7.1%
Some technical school or undergraduate university (n=115)	8.7%	43.5%	14.8%	13.9%	19.1%
Some post graduate university (n=126)	3.2%	51.6%	19.0%	15.9%	10.3%

The church seems to be viewed as a fairly trustworthy source of information by the population surveyed overall with 59.6% of those surveyed rating it as either very trustworthy or trustworthy. The church is viewed as untrustworthy by only 15.2% of those surveyed making the church the least non-trustworthy source of information. It is interesting to note that a large portion of those surveyed either did not know or had no basis to judge the trustworthiness of the church. This is perhaps due to an unfamiliarity with the church in general during soviet times.

Analyses by gender or age do not reveal a difference in how this source of information is viewed. The p-value for these analysis were .744, and .502 respectively.

Analyses by educational level do reveal a statistically significant variation in opinion regarding the trustworthiness of the church as a source of information. The analysis reveals a overall trend towards decreasing trust and increasing mistrust correlating with higher educational levels Those in the second educational group have a decreased level of trust in relation to those either more or less educated and an increased inability or lack of knowledge to evaluate the church as a source of information (33%). The p-values is .003.

Organ donation allows something positive to come out of a person's death.

	Agree	Disagree	No Opinion	Mean Score*
Total: (n=388)	56.7%	26.8%	16.5%	2.83
Gender				
Male (n=128)	56.3%	26.6%	17.2%	2.78
Female (n=258)	57.0%	27.2%	15.9%	2.85
Age				
50 and under (n=282)	62.8%	22.7%	14.5%	2.95
51 and over (n=106)	40.5%	37.7%	21.7%	2.49
Education				
High School or less (n=141)	46.8%	25.6%	27.7%	2.72
Some technical school or undergraduate university (n=115)	56.6%	30.4%	13.0%	2.76
Some post graduate university (n=126)	68.3%	23.8%	7.9%	3.01

*4=agree, 3=agree somewhat, 2=disagree somewhat, 1=disagree

In general, the population surveyed tends to agree with the statement provided. The data provided by the Partnership for Organ Donation on the American public gives a 90% agreement with this statement. The mean score is 3.31 Only 7% of Americans surveyed disagreed with this statement.

Analysis by gender does not reveal a difference of opinion. The p-value for the analysis is .254.

Analysis by age reveals a statistically significant variation in opinion in response to this statement. The younger age group registers more agreement with this statement and less dissent. The p-value is .002.

Analysis by educational level reveals a overall trend towards agreement with the statement with increasing educational level. The p-value is .001.

Organ donation helps families cope with their grief.

	Agree	Disagree	No Opinion	Mean Score*
Total: (n=388)	53.2%	40.8%	5.9%	2.53
Gender				
Male (n=128)	57.8%	34.4%	7.8%	2.66
Female (n=258)	50.5%	44.4%	5.1%	2.47
Age				
50 and under (n=282)	57.1%	36.6%	6.4%	2.60
51 and over (n=106)	42.8%	52.3%	4.8%	2.37
Education				
High School or less (n=141)	49.7%	41.8%	8.5%	2.50
Some technical school or undergraduate university (n=115)	50.8%	44.7%	4.4%	2.41
Some post graduate university (n=126)	58.7%	36.5%	4.8%	2.69

*4=agree, 3=agree somewhat, 2=disagree somewhat, 1=disagree

In general, the population surveyed tends to agree with the statement provided but there is obviously considerable disagreement as well. The data provided by the Partnership for Organ Donation on the American public gives a 59% agreement with this statement. The mean score is 2.81. 23% of Americans surveyed disagreed with this statement.

Analysis by gender does not reveal a difference of opinion. The p-value for the analysis is .350.

Analysis by age reveals a trend towards agreement with this statement in the younger age group and towards increasing dissent in the older age group. The p-value for this analysis is .009.

Analysis by educational level does not reveal a significant difference in agreement with this statement. The p-value is .474.

**All people should be considered donors unless they express their
desire not to be before their death.**

	Agree	Disagree	No Opinion	Mean Score*
Total: (n=388)	53.1%	40.7%	6.2%	2.69
Gender				
Male (n=128)	57.0%	36.0%	7.0%	2.85
Female (n=258)	50.8%	43.4%	5.8%	2.61
Age				
50 and under (n=282)	53.9%	39.7%	6.4%	2.72
51 and over (n=106)	50.9%	43.3%	5.7%	2.62
Education				
High School or less (n=141)	56.0%	36.2%	7.8%	2.81
Some technical school or undergraduate university (n=115)	45.2%	47.9%	7.0%	2.50
Some post graduate university (n=126)	57.1%	38.9%	4.0%	2.73

*4=agree, 3=agree somewhat, 2=disagree somewhat, 1=disagree

In general, the population surveyed tends to agree with the statement provided but there is considerable disagreement as well. This statement addresses the receptivity of Armenians to an opt-out system of organ donation and procurement. It seems there would be considerable resistance to such a policy in the absence of increased awareness and conversion of the general public.

Analysis by gender does not reveal a difference of opinion. The p-value for the analysis is .160.

Analysis by age does not reveals a trend towards agreement with this statement. The p-value for this analysis is .744.

Analysis by educational level does not reveal a significant difference in agreement with this statement. The p-value is .565.

The organs of a deceased individual do not belong to the individual but should be used for the good of others.

	Agree	Disagree	No Opinion	Mean Score*
Total: (n=388)	38.6%	58.0%	3.4%	2.24
Gender				
Male (n=128)	33.6%	61.7%	4.7%	2.13
Female (n=258)	41.1%	56.2%	2.7%	2.30
Age				
50 and under (n=282)	41.8%	55.3%	2.8%	2.35
51 and over (n=106)	30.2%	65.1%	4.7%	1.97
Education				
High School or less (n=141)	38.2%	57.4%	4.3%	2.24
Some technical school or undergraduate university (n=115)	33.0%	65.2%	1.7%	2.05
Some post graduate university (n=126)	45.2%	50.8%	4.0%	2.45

*4=agree, 3=agree somewhat, 2=disagree somewhat, 1=disagree

In general, the population surveyed tends to disagree with the statement provided but there is considerable agreement as well. This statement again, addresses the receptivity of Armenians to an opt-out system of organ donation and procurement. From the responses it seems that the foundation of working towards the collective good is not an alien idea to the general public.

Analysis by gender does not reveal a difference of opinion. The p-value for the analysis is .568.

Analysis by age does reveals a trend towards disagreement with this statement with increasing age. The p-value for this analysis is .031.

Analysis by educational level does not reveal a significant difference in agreement with this statement. The p-value is .405.

Most people who receive transplants gain additional years of healthy life.

	Agree	Disagree	No Opinion	Mean Score*
Total: (n=388)	81.2%	6.0%	12.9%	3.60
Gender				
Male (n=128)	78.9%	10.2%	10.9%	3.50
Female (n=258)	82.1%	3.9%	14.0%	3.65
Age				
50 and under (n=282)	83.7%	6.0%	10.3%	3.61
51 and over (n=106)	74.5%	5.7%	19.8%	3.58
Education				
High School or less (n=141)	76.6%	4.2%	19.1%	3.59
Some technical school or undergraduate university (n=115)	76.5%	9.6%	13.9%	3.46
Some post graduate university (n=126)	91.3%	4.8%	4.0%	3.72

*4=agree, 3=agree somewhat, 2=disagree somewhat, 1=disagree

In general, the population surveyed tends to strongly agree with the statement provided. The data obtained is remarkably similar to the data provided by the Partnership for Organ Donation. They quote the US population surveyed as 85% in agreement with this statement and 8% in disagreement. This statement provides a snapshot of how Armenians view the value of organ transplantation programs. This result is a bit surprising given the technical difficulties within Armenia itself.

Analysis by gender does not reveal a difference of opinion. The p-value for the analysis is .165.

Analysis by age does not reveal a difference of opinion. The p-value for this analysis is .137.

Analysis by educational level does reveal a trend towards increasing agreement with the statement correlating with increasing educational level. The p-value is .001.

Donation of a kidney is associated with a significant decline in longevity of the donor.

	Agree	Disagree	No Opinion	Mean Score*
Total: (n=388)	71.4%	12.3%	16.2%	3.41
Gender				
Male (n=128)	75.8%	9.4%	14.8%	3.50
Female (n=258)	69.4%	13.9%	16.7%	3.37
Age				
50 and under (n=282)	74.5%	11.7%	13.8%	3.43
51 and over (n=106)	63.2%	14.1%	22.6%	3.38
Education				
High School or less (n=141)	63.9%	10.0%	26.2%	3.50
Some technical school or undergraduate university (n=115)	75.6%	13.0%	11.3%	3.40
Some post graduate university (n=126)	77.0%	15.0%	7.9%	3.35

*4=agree, 3=agree somewhat, 2=disagree somewhat, 1=disagree

In general, the population surveyed tends to strongly agree with the statement provided. While Armenians tend to agree that transplantation is of benefit to the recipient, they also seem to believe that the donor suffers greatly from the act of donating. Given the current condition of medical care in the Republic this fear may be somewhat founded. The issue of nonmaleficance is significant under these circumstances.

Analysis by gender does not reveal a difference of opinion. The p-value for the analysis is .554.

Analysis by age does not reveal a difference of opinion. The p-value for this analysis is .109.

Analysis by educational level reveals a trend in difference of opinion. The higher level of education the more in agreement with the statement the respondent was. Interestingly, the more the respondent tended to disagree as well. The level of those with no opinion decreased with increasing levels of education. The p-value is .003.

Donation of a kidney is associated with a significant decline in quality of life of the donor.

	Agree	Disagree	No Opinion	Mean Score*
Total: (n=388)	83.0%	4.9%	12.1%	3.68
Gender				
Male (n=128)	82.0%	5.5%	12.5%	3.66
Female (n=258)	83.7%	4.7%	11.6%	3.69
Age				
50 and under (n=282)	85.8%	4.6%	9.6%	3.68
51 and over (n=106)	75.5%	5.7%	18.9%	3.69
Education				
High School or less (n=141)	76.6%	5.7%	17.7%	3.65
Some technical school or undergraduate university (n=115)	85.2%	5.2%	9.6%	3.66
Some post graduate university (n=126)	88.9%	4.0%	7.1%	3.72

*4=agree, 3=agree somewhat, 2=disagree somewhat, 1=disagree

In general, the population surveyed tends to strongly agree with the statement provided. As in the response to the previous statement, while Armenians tend to agree that transplantation is of benefit to the recipient, they also seem to believe that the donor suffers greatly from the act of donating.

Analysis by gender does not reveal a difference of opinion. The p-value for the analysis is .993.

Analysis by age does not reveal a difference of opinion. The p-value for this analysis is .092.

Analysis by educational level does not reveal a trend in difference of opinion. The p-value is .137.

It should be legal for an individual to sell one kidney to an unrelated recipient.

	Agree	Disagree	No Opinion	Mean Score*
Total: (n=388)	48.7%	38.9%	12.4%	2.63
Gender				
Male (n=128)	43.8%	44.5%	11.7%	2.52
Female (n=258)	50.8%	36.5%	12.8%	2.67
Age				
50 and under (n=282)	52.8%	36.2%	11.0%	2.73
51 and over (n=106)	37.8%	46.3%	16.0%	2.35
Education				
High School or less (n=141)	36.9%	44.7%	18.4%	2.32
Some technical school or undergraduate university (n=115)	44.3%	46.1%	9.6%	2.49
Some post graduate university (n=126)	65.9%	25.4%	8.7%	3.07

*4=agree, 3=agree somewhat, 2=disagree somewhat, 1=disagree

In general, the population surveyed tends to agree with the statement provided. There is considerable disagreement as well. The Partnership for Organ Donation did not administer this question to the US public but there is anecdotal evidence that the US public give considerable support to the idea of commercialization. Professional opinion is usually against such activity as discussed in the chapter on policy.

Analysis by gender does not reveal a difference of opinion. The p-value for the analysis is .354

Analysis by age does not reveal a significant difference of opinion. The p-value for this analysis is .065.

Analysis by educational level reveals a trend in difference of opinion. There appears to be a correlation between increasing educational level and increasing approval for legalization of kidney sales. The p-value is .001.

Organ transplantation in the world is an experimental medical procedure.

	Agree	Disagree	No Opinion	Mean Score*
Total: (n=388)	39.4%	17.5%	43.0%	2.98
Gender				
Male (n=128)	36.7%	21.1%	42.2%	2.82
Female (n=258)	41.1%	15.1%	43.8%	3.09
Age				
50 and under (n=282)	41.2%	17.7%	41.1%	2.97
51 and over (n=106)	34.9%	17.0%	48.1%	3.00
Education				
High School or less (n=141)	22.7%	10.0%	67.4%	2.96
Some technical school or undergraduate university (n=115)	38.2%	20.9%	40.9%	2.93
Some post graduate university (n=126)	61.1%	22.2%	16.7%	3.07

*4=agree, 3=agree somewhat, 2=disagree somewhat, 1=disagree

In general, the population surveyed tends to agree with the statement provided, however, there is large proportion of those surveyed who had no opinion regarding this statement. This can probably be attributed to a general lack of familiarity with the subject. The Partnership for Organ Donation reports 39% agreement, 56% disagreement and 5% reporting no opinion. The mean score reported is 2.33.

Analysis by gender does not reveal a difference of opinion. The p-value for the analysis is .619

Analysis by age does not reveal a significant difference of opinion. The p-value for this analysis is .395.

Analysis by educational level reveals a trend in difference of opinion. There appears to be a correlation between increasing educational level and increasing agreement with the statement that organ transplantation is experimental. Also of interest is the decrease in non expressed opinion with increasing educational level. The p-value is .001.

Organ transplantation is against your religion.

	Agree	Disagree	No Opinion	Mean Score*
Total: (n=388)	22.9%	49.4%	27.7%	1.96
Gender				
Male (n=128)	26.8%	50.4%	22.8%	2.00
Female (n=258)	20.9%	48.8%	30.3%	1.93
Age				
50 and under (n=282)	19.7%	53.2%	27.0%	1.85
51 and over (n=106)	31.4%	39.0%	29.5%	2.27
Education				
High School or less (n=141)	28.8%	51.1%	20.1%	2.07
Some technical school or undergraduate university (n=115)	24.7%	41.6%	33.6%	2.09
Some post graduate university (n=126)	16.0%	52.8%	31.2%	1.74

*4=agree, 3=agree somewhat, 2=disagree somewhat, 1=disagree

In general, the population surveyed tends to disagree with the statement provided, however, there is large proportion of those surveyed who had no opinion regarding this statement. This can probably be attributed to a lack of knowledge regarding the stance of the church. The Partnership for Organ Donation reports 5% agreement, 89% disagreement and 6% reporting no opinion.

Analysis by gender does not reveal a difference of opinion. The p-value for the analysis is .220.

Analysis by age does not reveal a significant difference of opinion. The p-value for this analysis is .093.

Analysis by educational level does not reveal a significant difference of opinion. The p-value is .109.

People of your age are too old to donate.

	Agree	Disagree	No Opinion	Mean Score*
Total: (n=388)	26.3%	67.5%	6.2%	1.86
Gender				
Male (n=128)	21.2%	73.4%	5.5%	1.68
Female (n=258)	29.0%	64.4%	6.6%	1.95
Age				
50 and under (n=282)	14.2%	80.5%	5.3%	1.50
51 and over (n=106)	58.5%	33.0%	8.5%	2.84
Education				
High School or less (n=141)	33.3%	62.4%	4.3%	2.04
Some technical school or undergraduate university (n=115)	25.2%	67.9%	7.0%	1.83
Some post graduate university (n=126)	18.2%	73.8%	7.9%	1.63

*4=agree, 3=agree somewhat, 2=disagree somewhat, 1=disagree

In general, the population surveyed tends to disagree with the statement provided. The Partnership for Organ Donation reports 14% agreement, 80% disagreement and 5% reporting no opinion. The over 55+ age group agreed at 34% and disagreed at 53%.

Analysis by gender does not reveal a difference of opinion. The p-value for the analysis is .158.

Analysis by age reveals a significant difference of opinion between the two age groups examined. The 51+ age group considers itself too old to donate irrespective of other health indications. The p-value for this analysis is .001.

Analysis by educational level does not reveal a significant difference of opinion. The p-value is .303.

It is possible for a brain dead person to recover from his/her injuries.

	Agree	Disagree	No Opinion	Mean Score*
Total: (n=388)	23.5%	42.6%	33.9%	2.09
Gender				
Male (n=128)	26.0%	44.9%	29.1%	2.07
Female (n=258)	22.5%	41.9%	35.7%	2.11
Age				
50 and under (n=282)	24.8%	43.6%	31.6%	2.11
51 and over (n=106)	20.0%	40.0%	40.0%	2.03
Education				
High School or less (n=141)	18.4%	36.1%	45.4%	2.14
Some technical school or undergraduate university (n=115)	28.9%	36.0%	35.1%	2.31
Some post graduate university (n=126)	25.4%	56.3%	18.2%	1.92

*4=agree, 3=agree somewhat, 2=disagree somewhat, 1=disagree

In general, the population surveyed tends to disagree with the statement provided. The Partnership for Organ Donation reports 21% agreement, 63% disagreement and 16% reporting no opinion. The significant percentage (33.9%) registered no opinion for our survey. This phenomena can probably be explained by lack of awareness of the definition of brain death. The response indicates an opportunity for public education on this issue.

Analysis by gender does not reveal a difference of opinion. The p-value for the analysis is .150.

Analysis by age does not reveal a significant difference of opinion between the two age groups examined. The p-value for this analysis is .309.

Analysis by educational level reveals a trend toward disagreement with the statement given with increasing level of education. Interestingly the percentage of those registering no opinion decreases with increasing level of education as well. The p-value is .001.

After organ transplantation the patient can be buried as usual.

	Agree	Disagree	No Opinion	Mean Score*
Total: (n=388)	79.6%	15.7%	4.6%	3.50
Gender				
Male (n=128)	83.5%	11.7%	4.7%	3.66
Female (n=258)	77.5%	17.8%	4.6%	3.42
Age				
50 and under (n=282)	81.9%	14.2%	3.9%	3.53
51 and over (n=106)	73.6%	19.8%	6.6%	2.03
Education				
High School or less (n=141)	80.1%	14.9%	5.0%	3.51
Some technical school or undergraduate university (n=115)	72.2%	22.6%	5.2%	3.29
Some post graduate university (n=126)	85.7%	10.4%	4.0%	3.68

*4=agree, 3=agree somewhat, 2=disagree somewhat, 1=disagree

In general, the population surveyed tends to agree with the statement provided. This indicates that the population does not view donation as disruptive to the burial process. The Partnership for Organ Donation asked the question: “It is impossible to have a regular funeral service following organ donation.” They report a similar response to ours of 13% agreement, 81% disagreement and 5% reporting no opinion.

Analysis by gender does not reveal a statistically significant difference of opinion, however there seems to be some resistance in the female population to the idea of burial as usual. The p-value for the analysis is .056.

Analysis by age reveals no significant difference of opinion between the two age groups examined. The p-value for this analysis is .309.

Analysis by educational level does not reveal a significant difference of opinion. The p-value is .296.

It is important for a body to have all of its parts when buried.

	Agree	Disagree	No Opinion	Mean Score*
Total: (n=388)	20.4%	73.4%	6.2%	1.68
Gender				
Male (n=128)	15.6%	76.6%	7.8%	1.58
Female (n=258)	23.0%	71.6%	5.4%	1.74
Age				
50 and under (n=282)	19.5%	74.4%	6.0%	1.65
51 and over (n=106)	22.6%	70.8%	6.6%	1.76
Education				
High School or less (n=141)	29.3%	63.5%	7.1%	1.98
Some technical school or undergraduate university (n=115)	19.2%	71.3%	9.6%	1.65
Some post graduate university (n=126)	12.7%	84.9%	2.4%	1.42

*4=agree, 3=agree somewhat, 2=disagree somewhat, 1=disagree

In general, the population surveyed tends to disagree with the statement provided. Again, this indicates that the population does not view donation as disruptive to the burial process. This question addresses the belief that the body must be intact in order to be buried properly. This is a fairly commonly held belief in parts of the world and within different ethnic groups. Although the belief does not appear to be overwhelming, there is a substantial group (20.4%) who believe this statement to be true. The Partnership for Organ Donation report a similar response to the survey conducted in Armenia with 17% agreement, 78% disagreement and 4% reporting no opinion.

Analysis by gender does not reveal a statistically significant difference of opinion. The p-value for the analysis is .168.

Analysis by age reveals no significant difference of opinion between the two age groups examined. The p-value for this analysis is .594.

Analysis by educational level reveals a trend towards increasing disagreement with higher levels of education. The p-value is .004.

You are worried that a loved one's body would be disfigured if their organs were donated.

	Agree	Disagree	No Opinion	Mean Score*
Total: (n=388)	36.6%	57.2%	6.2%	2.15
Gender				
Male (n=128)	32.6%	58.8%	8.7%	2.07
Female (n=258)	38.9%	56.4%	4.7%	2.20
Age				
50 and under (n=282)	34.4%	59.8%	5.7%	2.08
51 and over (n=106)	42.5%	50.0%	7.5%	2.36
Education				
High School or less (n=141)	40.0%	51.4%	8.6%	2.33
Some technical school or undergraduate university (n=115)	38.1%	55.8%	6.2%	2.17
Some post graduate university (n=126)	32.6%	63.5%	4.0%	1.98

*4=agree, 3=agree somewhat, 2=disagree somewhat, 1=disagree

In general, the population surveyed tends to disagree with the statement provided. Although the belief does not appear to be overwhelming, there is a substantial group (36.6%) who believe this statement to be true. The Partnership for Organ Donation report a 19% agreement, 74% disagreement and 4% reporting no opinion. This question addresses some of the taboos of disfigurement associated with organ donation.

Analysis by gender does not reveal a statistically significant difference of opinion. The p-value for the analysis is .418.

Analysis by age reveals no significant difference of opinion between the two age groups examined. The p-value for this analysis is .381.

Analysis by educational level does not reveal a statistically significant trend associated with higher levels of education. The p-value is .244.

Would you like to donate your organs after your death?

	Yes	Maybe	Impossible	No	Don't Know
Total: (n=388)	47.5%	29.5%	4.4%	12.4%	6.2%
Gender					
Male (n=128)	48.4%	30.5%	1.6%	13.3%	6.2%
Female (n=258)	46.7%	29.2%	5.8%	12.1%	6.2%
Age					
50 and under (n=282)	49.1%	29.8%	3.9%	9.6%	7.5%
51 and over (n=106)	43.4%	28.3%	5.7%	19.8%	2.8%
Education					
High School or less (n=141)	43.3%	25.5%	6.4%	16.3%	8.5%
Some technical school or undergraduate university (n=115)	45.6%	30.7%	3.5%	12.3%	7.9%
Some post graduate university (n=126)	54.8%	31.7%	3.2%	7.9%	2.4%

In general, the population surveyed indicates an openness to organ donation. 77% of those polled would either definitely or maybe donate their own organs. Only 16.8% appear opposed to the idea and 6.2% are undecided. These statistics are remarkable in an environment without an established protocol for donation. These results indicate a great willingness on the part of Armenians to help those in need. The Partnership for Organ Donation asked a similar question regarding the likelihood of organ donation after death and 69% of respondents rated themselves as Very or somewhat likely to donate. 25% were not very or not at all likely to donate.

Analysis by gender does not reveal a statistically significant difference of opinion. The p-value for the analysis is .442.

Analysis by age reveals a significant difference of opinion between the two age groups examined. The older age group is much less likely to donate their organs with 25.5% saying no or it is impossible. The p-value for this analysis is .036.

Analysis by educational level does not reveal a statistically significant trend associated with higher levels of education. The p-value is .102.

If you do not wish to donate your organs after your death, what is the reason?

The most frequently mentioned reasons for not wanting to donate organs after death were as follows:

Don't Know 16 mentions

Unpleasant/hard to think about 9 mentions

Don't believe in transplantation/can't accept/distrustful it 9 mentions

Have not thought about it 7 mentions

Would not give to strangers, only relatives 6 mentions

Not healthy/organs not healthy 6 mentions

Against my religion 3 mentions

Too old 2 mentions

Some interesting responses to this question were, "I'm not ready psychologically", "As I was born I would like to die.", "Egoism,", "Every person is unique.", "I don't want someone to touch me.", "It is not possible in Armenia.", "My organs are already ill.", "Lack of skills of professionals.", "Maybe God doesn't approve."

Would you accept an organ transplantation?

	Yes	No	Don't Know
Total: (n=388)	72.5%	16.8%	10.6%
Gender			
Male (n=128)	75.6%	15.0%	9.4%
Female (n=258)	70.8%	17.9%	11.3%
Age			
50 and under (n=282)	76.4%	12.5%	11.1%
51 and over (n=106)	62.3%	28.3%	9.4%
Education			
High School or less (n=141)	67.4%	21.3%	11.3%
Some technical school or undergraduate university (n=115)	73.4%	15.9%	10.6%
Some post graduate university (n=126)	76.2%	13.5%	10.3%

In general, the population surveyed indicates an openness to organ donation. 72.5% of those polled would accept an organ donation if necessary. Only 16.8% appear opposed to the idea and 10.6% are undecided.

Analysis by gender does not reveal a statistically significant difference of opinion. The p-value for the analysis is .616.

Analysis by age reveals a significant difference of opinion between the two age groups examined. The older age group is much less likely to accept an organ for transplantation. 28.3% would say no to an organ transplant if in need. The p-value for this analysis is .001.

Analysis by educational level does not reveal a statistically significant trend associated with higher levels of education. The p-value is .507.

In the future animals organs may be transplanted in the place of human organs. Would you accept transplantation of an animal organ?

	Yes	No	Don't Know
Total: (n=388)	41.5%	39.1%	19.4%
Gender			
Male (n=128)	45.7%	34.6%	19.7%
Female (n=258)	38.9%	41.6%	19.5%
Age			
50 and under (n=282)	43.2%	37.1%	19.6%
51 and over (n=106)	36.8%	44.3%	18.9%
Education			
High School or less (n=141)	36.9%	45.4%	17.7%
Some technical school or undergraduate university (n=115)	38.9%	38.9%	22.1%
Some post graduate university (n=126)	49.2%	32.5%	18.2%

In general, the population surveyed seems split on the issue of whether or not animal organs are acceptable for transplantation. The Partnership for Organ Donation asked a similar question of the American public, “ If you needed an organ transplant to regain your health, would you accept an organ transplant from an animal if a suitable human organ was not available?”. The results were 51% willing to accept an animal organ.

Analysis by gender does not reveal a statistically significant difference of opinion. The p-value for the analysis is .368. The Partnership for Organ Donation reported that women were less accepting of an animal transplant.

Analysis by age reveals a significant difference of opinion between the two age groups examined. The older age group is much less likely to donate their organs with 25.5% saying no or it is impossible. The p-value for this analysis is .405.

Analysis by educational level does not reveal a statistically significant trend associated with higher levels of education. The p-value is .183.

Thinking about your own death makes you uncomfortable.

	Agree	Disagree	No Opinion	Mean Score*
Total: (n=388)	70.5%	23.2%	6.3%	3.10
Gender				
Male (n=128)	65.9%	25.4%	8.7%	3.01
Female (n=258)	72.6%	22.4%	5.1%	3.14
Age				
50 and under (n=282)	72.2%	20.5%	7.2%	3.18
51 and over (n=106)	66.0%	30.2%	3.8%	2.91
Education				
High School or less (n=141)	72.9%	21.5%	5.7%	3.16
Some technical school or undergraduate university (n=115)	69.6%	24.1%	6.2%	3.12
Some post graduate university (n=126)	68.0%	24.8%	7.2%	3.02

*4=agree, 3=agree somewhat, 2=disagree somewhat, 1=disagree

In general, the population surveyed indicates agreement with the given statement. There seems to be a general feeling of uneasiness regarding one's own death in Armenian popular opinion. The Partnership for Organ Donation reported 36% agreement and 58% disagreement with the same statement indicating an interesting difference in the psychology of the people of the two countries. This discomfort with the subject of death can be felt in the qualitative responses to certain questions as well.

Analysis by gender does not reveal a statistically significant difference of opinion. The p-value for the analysis is .583.

Analysis by age does not reveal a statistically significant difference of opinion. The p-value for this analysis is .164.

Analysis by educational level does not reveal a statistically significant trend associated with higher levels of education. The p-value is .803.

In some countries the deceased person’s directions are not enough to donate organs, the family members have the final word. If your loved one gave directions before death to donate their organs would you donate their organs upon their death to his/her relatives?

	Yes	No	Don't Know	Refused to answer
Total: (n=388)	81.4%	4.1%	9.6%	4.9%
Gender				
Male (n=128)	80.3%	3.1%	9.4%	7.1%
Female (n=258)	81.8%	4.6%	9.7%	3.9%
Age				
50 and under (n=282)	84.0%	3.9%	8.9%	3.2%
51 and over (n=106)	74.5%	4.7%	11.3%	9.4%
Education				
High School or less (n=141)	75.2%	5.7%	14.2%	5.0%
Some technical school or undergraduate university (n=115)	79.8%	1.7%	9.6%	8.8%
Some post graduate university (n=126)	88.9%	4.8%	4.8%	1.6%

In general, the population surveyed indicates a willingness to honor the wishes of those loved ones who choose to donate their organs upon their death. The Partnership for Organ Donation asked a similar question regarding the likelihood of donating a loved one’s organs given their expressed desire to donate upon their death however, they did not specify who the organs would go to. They reported a 93% willingness to comply with the wishes of the deceased. This statistic is most comparable to the second part of this question i.e. willingness to allow donation to any stranger in need.

Analysis by gender does not reveal a statistically significant difference of opinion. The p-value for the analysis is .519.

Analysis by age reveals a trend of opinion between the two age groups examined. The older age group is less likely to allow donation of their loved one’s organs. The p-value for this analysis is .057.

Analysis by educational level reveals a statistically significant trend associated with higher levels of education being more willing to honor the wishes of their deceased family members. The p-value is .012.

To a stranger in need?

	Yes	No	Don't Know	Refused to answer
Total: (n=388)	74.7%	7.5%	12.4%	5.4%
Gender				
Male (n=128)	70.1%	5.5%	16.5%	7.9%
Female (n=258)	76.7%	8.5%	10.5%	4.3%
Age				
50 and under (n=282)	76.9%	7.5%	12.1%	3.6%
51 and over (n=106)	68.9%	7.5%	13.2%	10.4%
Education				
High School or less (n=141)	71.6%	7.1%	15.6%	5.7%
Some technical school or undergraduate university (n=115)	73.7%	6.1%	13.2%	7.0%
Some post graduate university (n=126)	78.6%	8.7%	8.7%	4.0%

As in the previous question, in general, the population surveyed indicates a willingness to honor the wishes of those loved ones who choose to donate their organs upon their death.

Analysis by gender does not reveal a statistically significant difference of opinion. The p-value for the analysis is .108.

Analysis by age does not reveal a statistically significant difference of opinion. The p-value for this analysis is .062.

Analysis by educational level does not reveal a statistically significant trend. The p-value is .600.

In the absence of an advance directive would you donate the organs of your family members upon their death to his/her relatives?

	Yes	No	Don't Know	Refused to answer
Total: (n=388)	50.9%	24.0%	20.2%	4.9%
Gender				
Male (n=128)	51.2%	21.3%	18.9%	8.7%
Female (n=258)	50.8%	25.2%	20.9%	3.1%
Age				
50 and under (n=282)	52.0%	24.2%	21.0%	2.8%
51 and over (n=106)	48.1%	23.6%	17.9%	10.4%
Education				
High School or less (n=141)	37.6%	32.6%	24.8%	5.0%
Some technical school or undergraduate university (n=115)	55.3%	17.5%	17.5%	9.6%
Some post graduate university (n=126)	60.3%	20.6%	18.2%	0.8%

In general, the population surveyed indicates an ambivalence towards donating the organs of their loved one's in the absence of an advance directive even to their own family members. The Partnership for organ donation found that about 47% of the respondents were very or somewhat likely to donate their family member's organs in the absence of an advance directive. This statistic is most comparable to the second part of the question to follow.

Analysis by gender does not reveal a statistically significant difference of opinion. The p-value for the analysis is .109.

Analysis by age does reveal a difference of opinion between the older and younger age groups. The older group appears less likely to donate their loved one's organs without an advance directive. The p-value for this analysis is .023.

Analysis by educational level reveals a trend towards increased willingness to donate with increasing educational status. The p-value is .001.

To a stranger in need?

	Yes	No	Don't Know	Refused to answer
Total: (n=388)	38.2%	34.4%	22.2%	5.2%
Gender				
Male (n=128)	39.4%	28.3%	22.8%	9.4%
Female (n=258)	37.6%	37.2%	22.1%	3.1%
Age				
50 and under (n=282)	40.2%	33.4%	23.1%	3.2%
51 and over (n=106)	33.0%	36.8%	19.8%	10.4%
Education				
High School or less (n=141)	26.2%	48.2%	20.6%	5.0%
Some technical school or undergraduate university (n=115)	42.1%	25.4%	22.8%	9.6%
Some post graduate university (n=126)	46.8%	27.0%	24.6%	1.6%

In general, the population surveyed indicates an reluctance towards donating the organs of their loved one's in the absence of an advance directive to a stranger in need. Still, 38.2% of respondents are willing to do so. The Partnership for organ donation found that about 47% of the respondents were very or somewhat likely to donate their family member's organs in the absence of an advance directive.

Analysis by gender reveals a difference of opinion between men and women with women less likely to agree to donation of a family member's organs without an advance directive. The p-value for the analysis is .034.

Analysis by age reveals difference of opinion between the older and younger age groups with the older group less likely to agree to donation. The p-value for this analysis is .025.

Analysis by educational level indicates a trend towards increasing willingness to donate with increasing level of education. The p-value is .001.

The following questions attempt to ascertain the level of willingness to donate within one's own family. Commentary will be kept to a minimum. The interesting trends to note are that respondents become less and less likely to donate a kidney while alive as we expand out the family tree. In some cases, respondents are more willing to donate outside the family i.e. to a friend in need than to an aunt, uncle, or grandparent. The rate of reported willingness to donate to a stranger is 18.2%.

Would you be willing to donate one of your kidneys while alive to your Husband/Wife?

	Yes	No	Don't Know	Refused to answer
Total: (n=388)	71.3%	13.2%	9.8%	5.7%
Gender				
Male (n=128)	80.3%	6.3%	5.5%	7.9%
Female (n=258)	66.7%	16.7%	12.0%	4.6%
Age				
50 and under (n=282)	72.9%	12.8%	10.7%	3.6%
51 and over (n=106)	67.0%	14.1%	7.5%	11.3%
Education				
High School or less (n=141)	66.7%	14.9%	11.3%	7.1%
Some technical school or undergraduate university (n=115)	71.0%	12.3%	10.5%	6.1%
Some post graduate university (n=126)	77.0%	11.1%	7.9%	4.0%

Analysis by gender reveals a difference of opinion between men and women with women less likely to donate a kidney while alive to their husbands. The p-value for the analysis is .002.

Analysis by age reveals difference of opinion between the older and younger age groups with the older group less likely to agree to donation. The p-value for this analysis is .024.

Analysis by educational level reveals no statistically significant trend. The p-value is .708.

Would you be willing to donate one of your kidneys while alive to your child?

	Yes	No	Don't Know	Refused to answer
Total: (n=388)	91.7%	1.8%	3.1%	3.4%
Gender				
Male (n=128)	93.7%	1.6%	1.6%	3.1%
Female (n=258)	90.7%	1.9%	3.9%	3.5%
Age				
50 and under (n=282)	92.2%	1.8%	3.6%	2.5%
51 and over (n=106)	90.6%	1.9%	1.9%	5.7%
Education				
High School or less (n=141)	88.6%	2.1%	4.3%	5.0%
Some technical school or undergraduate university (n=115)	89.5%	2.6%	4.4%	3.5%
Some post graduate university (n=126)	96.8%	0.8%	0.8%	1.6%

Interestingly, no significant difference is noted between the two genders. The p-value is .655.

Would you be willing to donate one of your kidneys while alive to your father?

	Yes	No	Don't Know	Refused to answer
Total: (n=388)	70.0%	15.2%	7.8%	7.0%
Gender				
Male (n=128)	76.4%	10.2%	5.5%	7.9%
Female (n=258)	66.7%	17.8%	8.9%	6.6%
Age				
50 and under (n=282)	72.6%	14.9%	8.2%	4.3%
51 and over (n=106)	63.2%	16.0%	6.6%	14.1%
Education				
High School or less (n=141)	66.7%	17.0%	9.2%	7.1%
Some technical school or undergraduate university (n=115)	64.9%	18.4%	9.6%	7.0%
Some post graduate university (n=126)	80.1%	9.5%	4.0%	6.3%

Would you be willing to donate one of your kidneys while alive to your mother?

	Yes	No	Don't Know	Refused to answer
Total: (n=388)	70.6%	14.0%	8.3%	7.0%
Gender				
Male (n=128)	76.2%	9.5%	6.3%	7.9%
Female (n=258)	67.7%	16.3%	9.3%	6.6%
Age				
50 and under (n=282)	73.5%	13.6%	8.6%	4.3%
51 and over (n=106)	63.2%	15.1%	7.5%	14.1%
Education				
High School or less (n=141)	67.1%	16.4%	9.3%	7.1%
Some technical school or undergraduate university (n=115)	64.6%	17.7%	10.6%	7.1%
Some post graduate university (n=126)	81.7%	7.1%	4.8%	6.3%

Would you be willing to donate one of your kidneys while alive to your grandmother?

	Yes	No	Don't Know	Refused to answer
Total: (n=388)	33.3%	43.4%	14.5%	8.8%
Gender				
Male (n=128)	33.1%	42.5%	11.8%	12.6%
Female (n=258)	33.7%	43.8%	15.5%	7.0%
Age				
50 and under (n=282)	33.4%	44.8%	14.9%	6.8%
51 and over (n=106)	33.0%	39.6%	13.2%	14.1%
Education				
High School or less (n=141)	36.9%	40.4%	14.9%	7.8%
Some technical school or undergraduate university (n=115)	24.6%	53.5%	14.9%	7.0%
Some post graduate university (n=126)	38.1%	37.3%	13.5%	11.1%

Would you be willing to donate one of your kidneys while alive to your grandfather?

	Yes	No	Don't Know	Refused to answer
Total: (n=388)	33.2%	43.4%	14.5%	8.8%
Gender				
Male (n=128)	33.1%	42.5%	11.8%	12.6%
Female (n=258)	33.6%	43.7%	15.6%	7.0%
Age				
50 and under (n=282)	33.6%	45.0%	14.6%	6.8%
51 and over (n=106)	32.4%	39.0%	14.3%	14.3%
Education				
High School or less (n=141)	36.4%	40.7%	15.0%	7.9%
Some technical school or undergraduate university (n=115)	24.8%	53.1%	15.0%	7.1%
Some post graduate university (n=126)	38.1%	37.3%	13.5%	11.1%

Would you be willing to donate one of your kidneys while alive to your aunt?

	Yes	No	Don't Know	Refused to answer
Total: (n=388)	27.7%	45.1%	18.9%	8.3%
Gender				
Male (n=128)	30.2%	36.5%	20.6%	12.7%
Female (n=258)	26.7%	49.2%	17.8%	6.2%
Age				
50 and under (n=282)	27.9%	45.7%	19.3%	7.1%
51 and over (n=106)	27.4%	43.4%	17.9%	11.3%
Education				
High School or less (n=141)	27.1%	44.3%	22.1%	6.4%
Some technical school or undergraduate university (n=115)	25.4%	50.0%	16.7%	7.9%
Some post graduate university (n=126)	30.9%	40.5%	17.5%	11.1%

Would you be willing to donate one of your kidneys while alive to your uncle?

	Yes	No	Don't Know	Refused to answer
Total: (n=388)	27.7%	45.6%	18.1%	8.5%
Gender				
Male (n=128)	31.7%	34.1%	20.6%	13.5%
Female (n=258)	26.0%	51.2%	16.7%	6.2%
Age				
50 and under (n=282)	27.9%	46.4%	18.6%	7.1%
51 and over (n=106)	27.4%	43.4%	17.0%	12.3%
Education				
High School or less (n=141)	27.9%	44.3%	21.4%	6.4%
Some technical school or undergraduate university (n=115)	24.6%	51.8%	15.8%	7.9%
Some post graduate university (n=126)	30.9%	41.3%	16.7%	11.1%

Would you be willing to donate one of your kidneys while alive to a close friend?

	Yes	No	Don't Know	Refused to answer
Total: (n=388)	36.3%	36.3%	19.9%	7.5%
Gender				
Male (n=128)	48.4%	20.6%	21.4%	9.5%
Female (n=258)	30.6%	43.8%	19.0%	6.6%
Age				
50 and under (n=282)	37.9%	36.1%	20.0%	6.1%
51 and over (n=106)	32.1%	36.8%	19.8%	11.3%
Education				
High School or less (n=141)	35.0%	38.6%	20.0%	6.4%
Some technical school or undergraduate university (n=115)	33.3%	39.5%	16.7%	10.5%
Some post graduate university (n=126)	40.5%	30.9%	22.2%	6.3%

Interestingly, women are less likely than their male counterparts to donate a kidney to a close friend in need. The p-value is .001.

Would you be willing to donate one of your kidneys while alive to a stranger in need?

	Yes	No	Don't Know	Refused to answer
Total: (n=388)	18.2%	55.7%	19.3%	6.8%
Gender				
Male (n=128)	22.2%	48.4%	20.6%	8.7%
Female (n=258)	16.4%	59.4%	18.4%	5.9%
Age				
50 and under (n=282)	16.5%	56.6%	21.5%	5.4%
51 and over (n=106)	22.9%	53.3%	13.3%	10.5%
Education				
High School or less (n=141)	21.6%	54.7%	18.0%	5.8%
Some technical school or undergraduate university (n=115)	14.0%	60.5%	18.4%	7.0%
Some post graduate university (n=126)	18.4%	52.0%	21.6%	8.0%

Most members of your family support the idea of organ donation.

	Agree	Disagree	No Opinion	Mean Score*
Total: (n=388)	37.3%	13.7%	49.0%	2.98
Gender				
Male (n=128)	38.6%	11.7%	49.6%	3.08
Female (n=258)	36.5%	14.7%	48.6%	2.92
Age				
50 and under (n=282)	39.6%	13.2%	47.1%	3.01
51 and over (n=106)	31.1%	15.1%	53.8%	2.90
Education				
High School or less (n=141)	34.1%	7.8%	58.2%	3.17
Some technical school or undergraduate university (n=115)	36.7%	21.1%	42.1%	2.68
Some post graduate university (n=126)	41.6%	14.4%	44.0%	3.08

*4=agree, 3=agree somewhat, 2=disagree somewhat, 1=disagree

In general, the population surveyed indicates that there is a moderate degree of consensus within families. The large percentage of those with no opinion seems to point up the unfamiliarity and discomfort of discussing organ donation within the family context. The Partnership for Organ Donation found that about 51% of the respondents agreed with this statement and that 20% disagreed. About 27% did not know the opinion of their family members.

Analysis by gender reveals no significant difference of opinion. The p-value for the analysis is .743.

Analysis by age reveals no significant difference of opinion between the older and younger age groups. The p-value for this analysis is .471.

Analysis by educational level indicates a trend towards increasing approval for donation within the family with an increasing level of education. The p-value is .008.

How willing are you to discuss organ donation with your family members?

	Willing	Unwilling	No Opinion
Total: (n=388)	62.4%	22.8%	14.8%
Gender			
Male (n=128)	64.6%	18.1%	17.3%
Female (n=258)	61.5%	25.3%	13.2%
Age			
50 and under (n=282)	65.3%	21.0%	13.6%
51 and over (n=106)	54.7%	27.3%	17.9%
Education			
High School or less (n=141)	58.5%	22.2%	19.3%
Some technical school or undergraduate university (n=115)	57.0%	24.6%	18.4%
Some post graduate university (n=126)	70.6%	23.0%	6.3%

In general, the population surveyed indicates that willingness to approach the subject with the family. Still, almost 23% of respondents were unwilling to discuss organ donation with their family members. The Partnership for Organ Donation found that about 36% of the respondents who wished to donate their organs were willing to discuss their decision with their family.

Analysis by gender reveals no significant difference of opinion. The p-value for the analysis is .191.

Analysis by age reveals no significant difference of opinion between the older and younger age groups. The p-value for this analysis is .297.

Analysis by educational level indicates a trend towards increasing willingness to discuss donation within the family with an increasing level of education. The p-value is .033.

Is there a particular reason why you are unwilling to discuss organ donation with your family?

Frequent responses to this question were as follows.

Unpleasant topic: 22 mentions

Don't know: 14 mentions

Differing opinions: 10 mentions

Have not thought about it: 8 mentions

Would bring up family conflict: 6 mentions

No reason to talk about it: 6 mentions

Insufficient knowledge to discuss: 5 mentions

Personally against the idea: 3 mentions

It's a private decision: 2 mentions

Some interesting responses to the questions were, "I am just not familiar with that topic.", "I have not thought about that before.", "It is a cruel topic.", "Psychologically, we are not ready.", "They would oppose such conversations.", "They would refuse to speak of such things.", "Until this moment there was no such topic."

Would financial incentives make you more or less likely to donate a family members' organs or would it have no effect?

	More likely	Less Likely	No Effect	Don't know
Total: (n=388)	10.1%	4.9%	65.6%	19.4%
Gender				
Male (n=128)	11.0%	2.4%	63.8%	22.8%
Female (n=258)	9.7%	6.2%	66.7%	17.4%
Age				
50 and under (n=282)	9.2%	5.3%	66.2%	19.2%
51 and over (n=106)	12.3%	3.8%	64.1%	19.8%
Education				
High School or less (n=141)	11.3%	5.7%	61.7%	21.3%
Some technical school or undergraduate university (n=115)	8.8%	7.9%	63.2%	20.2%
Some post graduate university (n=126)	9.5%	1.6%	72.2%	16.7%

**Would financial incentives make you more or less likely to donate
your own organs or would it have no effect?**

	More likely	Less Likely	No Effect	Don't know
Total: (n=388)	18.1%	3.6%	57.4%	20.9%
Gender				
Male (n=128)	18.1%	1.6%	56.7%	23.6%
Female (n=258)	18.2%	4.6%	58.1%	19.0%
Age				
50 and under (n=282)	17.4%	3.6%	56.6%	22.4%
51 and over (n=106)	19.8%	3.8%	59.4%	17.0%
Education				
High School or less (n=141)	17.0%	5.0%	54.6%	23.4%
Some technical school or undergraduate university (n=115)	15.8%	5.3%	56.1%	22.8%
Some post graduate university (n=126)	20.6%	0.8%	61.1%	17.5%

There is an anecdotal fear that commercialism would take advantage of those at a financial disadvantage especially given the difficult times that Armenia has faced recently. According to the responses to the above question, financial incentives would have little effect on the decision to donate.

Analysis by gender reveals no significant difference of opinion. The p-value for the analysis is .252 and .325 for the second question.

Analysis by age reveals no significant difference of opinion between the older and younger age groups. The p-value for this analysis is .768 and .695 for the second question.

Analysis by educational level reveals no trend with increasing levels of education. The p-value is .278 and .325 for the second question.

Given equal need, a poor person has as good a chance as a rich person of getting an organ transplant.

	Agree	Disagree	No Opinion	Mean Score*
Total: (n=388)	49.2%	50.3%	0.5%	2.48
Gender				
Male (n=128)	54.0%	46.1%	0.0%	2.62
Female (n=258)	46.5%	52.7%	0.8%	2.41
Age				
50 and under (n=282)	47.7%	51.6%	0.7%	2.45
51 and over (n=106)	53.4%	46.7%	0.0%	2.58
Education				
High School or less (n=141)	51.8%	48.2%	0.0%	2.58
Some technical school or undergraduate university (n=115)	47.8%	51.3%	0.9%	2.42
Some post graduate university (n=126)	48.4%	50.8%	0.8%	2.46

*4=agree, 3=agree somewhat, 2=disagree somewhat, 1=disagree

This question raises the issue of perceived equity of distribution of organs. According to the responses to the above question, there is a split opinion on whether there is an equitable distribution. The Partnership for Organ Donation reports that 35% of respondents agreed with the above statement and 58% disagreed. This seems to indicate a lack of knowledge in both countries regarding how organ allocation is performed.

Analysis by gender reveals no significant difference of opinion. The p-value for the analysis is .454.

Analysis by age reveals no significant difference of opinion between the older and younger age groups. The p-value for this analysis is .779.

Analysis by educational level reveals no trend with increasing levels of education. The p-value is .261.

Organs for transplant can be bought and sold on the “black market”.

	Yes	No	Don't Know
Total: (n=388)	38.0%	25.6%	36.4%
Gender			
Male (n=128)	45.2%	23.0%	31.7%
Female (n=258)	34.6%	26.8%	38.6%
Age			
50 and under (n=282)	43.0%	26.0%	31.0%
51 and over (n=106)	24.8%	24.8%	50.5%
Education			
High School or less (n=141)	26.6%	30.9%	42.4%
Some technical school or undergraduate university (n=115)	36.3%	29.2%	34.5%
Some post graduate university (n=126)	52.4%	16.9%	30.6%

Perceptions about possible illegal organ trafficking undermine the ability to recruit and donors and educate the public. There appears to be a good deal of suspicion and uncertainty regarding the issue of a black market for organs. The Partnership for Organ Donation found that within the US population surveyed, 34% believed that a black market for organs existed in the US. 41% disagreed and 25% did not know.

Analysis by gender reveals no significant difference of opinion. The p-value for the analysis is .134.

Analysis by age reveals a difference of opinion between the older and younger age groups. The younger group is more believing that a black market exists. The older age group is less certain that they can make a determination. The p-value for this analysis is .001.

Surprisingly, analysis by educational level a trend towards increasing belief in a black market for organs with increasing levels of education. The p-value is .001. This analysis does not hold up when asked specifically about Armenia, perhaps indicating that those with higher educational levels have been exposed to more of the international rumors regarding organ traffic.

**Organs for transplant can be bought and sold on the “black market”
in Armenia**

	Yes	No	Don't Know
Total: (n=388)	53.8%	21.4%	24.8%

**Organs for transplant can be bought and sold on the “black market”
in Russia**

	Yes	No	Don't Know
Total: (n=388)	82.1%	2.8%	15.2%

**Organs for transplant can be bought and sold on the “black market”
in China**

	Yes	No	Don't Know
Total: (n=388)	49.7%	2.8%	47.6%

**Organs for transplant can be bought and sold on the “black market”
in Iran**

	Yes	No	Don't Know
Total: (n=388)	45.1%	6.9%	47.9%

Chapter IV

Physician Survey

4.1 Professional barriers: Summary

Very little documentation of physician opinion exists in the current literature. Many of the questions here were taken from the Partnership for Organ Donation survey of the general American public from 1993. Additional questions were elaborated to examine issues specific to the physician population. Mean scores are reported for questions by assigning the following value to responses: 4=agree, 3=agree somewhat, 2=disagree somewhat, 1=disagree.

4.2 Results and discussion of the physician survey: Includes comparison with general public survey

The demographic breakdown of our physician survey is as follows:

Total	n=211
Gender	
Male	n=79
Female	n=131
Republic Hospital	n=70
Municipal Hospital	n=92
Ph.D.	n=26
non-Ph.D.	n=182
Age	
50 and under (n=282)	n=171
51 and over (n=106)	n=39
Position	
Chief of Dept.	n=25
Attending Physician	n=142
Resident	n=40
Intern	n=2

In the past have you ever read, heard, or seen any information about organ donation?

	Yes	No
Total: (n=211)	97.6%	2.4%
Gender		
Male (n=79)	98.7%	1.3%
Female (n=131)	96.9%	3.1%
Age		
50 and under (n=171)	98.3%	1.7%
51 and over (n=39)	94.9%	5.1%
Position		
Dept. Chief (n=25)	100.0%	0.0%
Staff MD (n=142)	97.2%	2.8%
Resident/Intern (n=42)	97.6%	2.4%

There was a high level of awareness among physicians although 2.4% of the physician respondents claimed to have never read, heard, or seen any information about organ donation. This result differs significantly from the responses of the general Armenian population. The p-value for a comparison between the two survey groups was .001.

An analysis by gender reveals no trend in responses with a p-value of .410.

An analysis by age reveals no trend in responses with a p-value of .210.

An analysis by position yields no statistically significant difference in responses. Of those who had no knowledge of donation, 4 were attending physicians and one was a resident. The p-value for this analysis is .697.

What was the source of the information?

The most frequently cited sources of information were as follows:

Literature/Scientific Literature: 104 mentions

TV: 72 mentions

Press: 44 mentions

Films 10 mentions

Newspapers: 10 mentions

Medical Institute: 7 mentions

Personal experience: 8 mentions

Colleagues: 7 mentions

Various sources: 7 mentions

Books: 6 mentions

Friends/relatives: 4 mentions

Life: 3 mentions

Taught themselves: 2 mentions

Patients: 2 mentions

Some of the interesting responses included, "Patient volunteered to give an eye", "I worked at a transplant center in Norway.", "Witness in the clinic of Dr. Babloyan.", "Personal experience in the USA and Norway.", "Donation between twins", "Saw it in Moscow", "Children's Center of Armenia.", "Saw the operation abroad". Surprisingly, many physicians named TV or films as their first or only source of information on the subject.

Would you agree with a new law which would legalize organ donation for transplantation after death?

	Yes	No	Don't Know
Total: (n=211)	85.8%	8.5%	5.7%
Gender			
Male (n=79)	91.1%	6.3%	2.5%
Female (n=131)	82.4%	9.9%	7.6%
Age			
50 and under (n=171)	86.6%	7.6%	5.8%
51 and over (n=39)	82.0%	12.8%	5.1%
Position			
Dept. Chief (n=25)	80.0%	12.0%	8.0%
Staff MD (n=142)	85.9%	9.9%	4.2%
Resident/Intern (n=42)	88.1%	2.4%	9.5%

There was a high level of support for legislation among physicians although 8.5% of the physicians would not support such a law. This result differs significantly from the responses of the general Armenian population. The p-value for a comparison between the two survey groups was .001.

An analysis by gender reveals no trend in responses with a p-value of .181.

An analysis by age reveals no trend in responses with a p-value of .567.

An analysis by position yields no statistically significant difference in responses. Of those who would not support the law 3 were chiefs of departments and 14 were attending physicians. The p-value for this analysis is .349.

Please rate the following sources of information by level of trustworthiness

Government

	Very Trustworthy	Trustworthy	Non-Trustworthy	Don't Know	No Basis to Judge
Total: (n=211)	1.4%	38.9%	39.8%	11.4%	8.5%
Gender					
Male (n=79)	0.0%	43.0%	38.0%	7.6%	11.4%
Female (n=131)	2.3%	36.6%	40.5%	13.7%	6.9%
Age					
50 and under (n=171)	1.2%	39.5%	36.0%	13.4%	9.9%
51 and over (n=39)	2.6%	35.9%	56.4%	2.6%	2.6%
Position					
Dept. Chief (n=25)	0.0%	44.0%	44.0%	12.0%	0.0%
Staff MD (n=142)	2.1%	38.7%	42.4%	7.7%	9.1%
Resident/Intern (n=42)	0.0%	38.1%	28.6%	21.4%	11.9%

In general, physicians seems to be split over whether the government serves as a trustworthy source of information. Around 40.3% of physicians regard the government as either very trustworthy or trustworthy 39.8% regards the government as non-trustworthy. This result differs significantly from the responses of the general Armenian population which tend to trust the government less. The p-value for a comparison between the two survey groups was .006.

An analysis by gender reveals no trend in responses with a p-value of .267.

An analysis by age reveals no trend in responses with a p-value of .058.

An analysis by position yields no statistically significant difference in responses. The p-value for this analysis is .174.

TV/Radio

	Very Trustworthy	Trustworthy	Non-Trustworthy	Don't Know	No Basis to Judge
Total: (n=211)	1.4%	51.2%	32.2%	10.0%	5.2%
Gender					
Male (n=79)	0.0%	49.4%	36.7%	8.9%	5.1%
Female (n=131)	2.3%	52.7%	29.0%	10.7%	5.3%
Age					
50 and under (n=171)	1.2%	50.0%	32.0%	10.5%	6.4%
51 and over (n=39)	2.6%	56.4%	33.3%	7.7%	0.0%
Position					
Dept. Chief (n=25)	4.0%	44.0%	36.0%	12.0%	4.0%
Staff MD (n=142)	1.4%	52.1%	33.8%	8.4%	4.2%
Resident/Intern (n=42)	0.0%	52.4%	26.2%	11.9%	9.5%

In general, physicians seems to view TV/radio as trustworthy source of information. Around 52.6% of physicians regard TV/radio as either very trustworthy or trustworthy. A still significant 32.2% regards the TV/radio as non-trustworthy. This result differs significantly from the responses of the general Armenian population which tend to trust TV/radio less. The p-value for a comparison between the two survey groups was .046.

An analysis by gender reveals no trend in responses with a p-value of .558.

An analysis by age reveals no trend in responses with a p-value of .485.

An analysis by position yields no statistically significant difference in responses. The p-value for this analysis is .745.

Doctors

	Very Trustworthy	Trustworthy	Non-Trustworthy	Don't Know	No Basis to Judge
Total: (n=211)	28.0%	63.0%	5.7%	0.9%	2.4%
Gender					
Male (n=79)	32.9%	62.0%	2.5%	1.3%	1.3%
Female (n=131)	25.2%	63.4%	7.6%	0.8%	3.1%
Age					
50 and under (n=171)	27.9%	63.4%	4.6%	1.2%	2.9%
51 and over (n=39)	28.2%	61.5%	10.3%	0.0%	0.0%
Position					
Dept. Chief (n=25)	32.0%	56.0%	12.0%	0.0%	0.0%
Staff MD (n=142)	28.9%	63.4%	4.2%	.7%	2.8%
Resident/Intern (n=42)	23.8%	66.7%	4.8%	2.4%	2.4%

In general, physicians seems to view themselves as a highly trustworthy source of information. Around 91.0% of physicians regard doctors as either very trustworthy or trustworthy. It is interesting to note that more physicians rated themselves as trustworthy as opposed to very trustworthy. A still significant 5.7% regards doctors as non-trustworthy. This result differs significantly from the responses of the general Armenian population which tend to trust doctors less. It is important to recall that the general population rated doctors as the most trustworthy source of information among the choices presented. The p-value for a comparison between the two survey groups was .001.

An analysis by gender reveals no trend in responses with a p-value of .393.

An analysis by age reveals no trend in responses with a p-value of .499.

An analysis by position yields no statistically significant difference in responses. The p-value for this analysis is .745.

Church

	Very Trustworthy	Trustworthy	Non-Trustworthy	Don't Know	No Basis to Judge
Total: (n=211)	8.1%	31.8%	26.5%	21.8%	11.8%
Gender					
Male (n=79)	8.9%	32.9%	26.6%	20.2%	11.4%
Female (n=131)	7.6%	30.5%	26.7%	22.9%	12.2%
Age					
50 and under (n=171)	7.0%	30.2%	27.9%	21.5%	13.4%
51 and over (n=39)	12.8%	38.5%	20.5%	23.1%	5.1%
Position					
Dept. Chief (n=25)	8.0%	28.0%	28.0%	28.0%	8.0%
Staff MD (n=142)	9.9%	33.1%	23.2%	20.4%	13.4%
Resident/Intern (n=42)	2.4%	28.6%	38.1%	21.4%	9.5%

In general, physicians seems to view the church as a trustworthy source of information. Around 39.9% of physicians regard the church as either very trustworthy or trustworthy. A significant 26.5% regards doctors as non-trustworthy. Also of note, there is a significant percentage of respondents who appear lack familiarity with the church and have therefore reserved a decision regarding it's trustworthiness (33.6%). This result differs significantly from the responses of the general Armenian population which tends to trust the church more. The percentage of the general population surveyed who stated that they did not know or had no basis to judge the trustworthiness of the church was comparable to the physician population at 25.2%. The p-value for a comparison between the two survey groups was .001.

An analysis by gender reveals no trend in responses with a p-value of .985.

An analysis by age reveals no trend in responses with a p-value of .338.

An analysis by position yields no statistically significant difference in responses. The p-value for this analysis is .582.

**All people should be considered donors unless they express their
desire not to be before their death.**

	Agree	Disagree	No Opinion	Mean Score*
Total: (n=211)	59.7%	37.4%	2.8%	2.75
Gender				
Male (n=79)	59.5%	38.0%	2.5%	2.71
Female (n=131)	59.5%	37.4%	3.0%	2.75
Age				
50 and under (n=171)	59.3%	38.9%	1.7%	2.70
51 and over (n=39)	61.5%	30.8%	7.7%	2.94
Position				
Dept. Chief (n=25)	56.0%	40.0%	4.0%	2.79
Staff MD (n=142)	57.0%	40.1%	2.8%	2.67
Resident/Intern (n=42)	69.0%	28.6%	2.4%	2.90

*4=agree, 3=agree somewhat, 2=disagree somewhat, 1=disagree

In general, physicians seem to agree with the statement above. However, as expected, a significant percentage disagree (37.4%). This result differs significantly from the responses of the general Armenian population which tends to agree but not as strongly with the statement. The mean score for the general population survey was 2.69 vs. 2.75 for the physician survey. Comparison between the two survey groups yields a p-value of .045. Again, as in the general population survey this result may indicate some difficulties in justifying an opt-out system of organ procurement if public and professional education is not undertaken prior to implementation.

An analysis by gender reveals no trend in responses with a p-value of .975.

An analysis by age reveals no trend in responses with a p-value of .103.

An analysis by position yields no statistically significant difference in responses. The p-value for this analysis is .704.

The organs of a deceased individual do not belong to the individual but should be used for the good of others.

	Agree	Disagree	No Opinion	Mean Score*
Total: (n=211)	49.8%	48.8%	1.4%	2.45
Gender				
Male (n=79)	44.3%	55.7%	0.0%	2.29
Female (n=131)	52.7%	45.0%	2.3%	2.54
Age				
50 and under (n=171)	47.7%	50.6%	1.7%	2.40
51 and over (n=39)	59.0%	41.0%	0.0%	2.69
Position				
Dept. Chief (n=25)	52.0%	48.0%	0.0%	2.48
Staff MD (n=142)	45.1%	52.8%	2.1%	2.35
Resident/Intern (n=42)	61.9%	38.1%	0.0%	2.69

*4=agree, 3=agree somewhat, 2=disagree somewhat, 1=disagree

In general, physicians seem split in their opinion regarding the above statement. This result differs significantly from the responses of the general Armenian population which tends to disagree with the statement. The mean score for the general population survey was 2.24 vs. 2.45 for the physician survey. Comparison between the two survey groups yields a p-value of .046. Again, as in the general population survey this result may indicate some difficulties in justifying an opt-out system of organ procurement if public and professional education is not undertaken prior to implementation.

An analysis by gender reveals no trend in responses with a p-value of .161.

An analysis by age reveals no trend in responses with a p-value of .352.

An analysis by position yields no statistically significant difference in responses. The p-value for this analysis is .313.

Most people who receive transplants gain additional years of healthy life.

	Agree	Disagree	No Opinion	Mean Score*
Total: (n=211)	94.3%	3.8%	1.9%	3.76
Gender				
Male (n=79)	96.1%	3.8%	0.0%	3.79
Female (n=131)	93.1%	3.8%	3.0%	3.74
Age				
50 and under (n=171)	93.6%	4.1%	2.3%	3.74
51 and over (n=39)	97.4%	2.6%	0.0%	3.85
Position				
Dept. Chief (n=25)	100.0%	0.0%	0.0%	3.88
Staff MD (n=142)	91.5%	5.7%	2.8%	3.71
Resident/Intern (n=42)	100.0%	0.0%	0.0%	3.83

*4=agree, 3=agree somewhat, 2=disagree somewhat, 1=disagree

In general, physicians seem to agree with the above statement. This result differs significantly from the responses of the general Armenian population which still tends to agree overwhelmingly with the statement. The mean score for the general population survey was 3.59 vs. 3.76 for the physician survey. Comparison between the two survey groups yields a p-value of .001.

An analysis by gender reveals no trend in responses with a p-value of .297.

An analysis by age reveals no trend in responses with a p-value of .561.

An analysis by position yields no statistically significant difference in responses. The p-value for this analysis is .195.

Donation of a kidney is associated with a significant decline in longevity of the donor.

	Agree	Disagree	No Opinion	Mean Score*
Total: (n=211)	69.2%	27.5%	3.3%	3.01
Gender				
Male (n=79)	63.3%	32.9%	3.8%	2.83
Female (n=131)	73.3%	23.7%	3.0%	3.13
Age				
50 and under (n=171)	68.0%	27.9%	4.1%	2.97
51 and over (n=39)	74.4%	25.6%	0.0%	3.15
Position				
Dept. Chief (n=25)	68.0%	28.0%	4.0%	2.96
Staff MD (n=142)	70.4%	26.8%	2.8%	3.06
Resident/Intern (n=42)	66.7%	28.6%	4.8%	2.85

*4=agree, 3=agree somewhat, 2=disagree somewhat, 1=disagree

In general, physicians seem to agree with the above statement. This result differs significantly from the responses of the general Armenian population which also tends to agree with the statement but a bit more strongly. The mean score for the general population survey was 3.50 vs. 3.01 for the physician survey. Comparison between the two survey groups yields a p-value of .001. This question addresses the perception that physicians may hold regarding potential damage or harm to the donor. This perception that the donor will be significantly worse off can serve as a potential barrier to physicians reassuring and recruiting patients who may offer to donate to a family member. Given the current state of health care in Armenia this perception may be more reality than it would appear from analyses carried out in the US and Europe regarding potential risks to the donor.

An analysis by gender reveals no trend in responses with a p-value of .310.

An analysis by age reveals no trend in responses with a p-value of .400.

An analysis by position yields no statistically significant difference in responses. The p-value for this analysis is .972.

Donation of a kidney is associated with a significant decline in quality of life of the donor.

	Agree	Disagree	No Opinion	Mean Score*
Total: (n=211)	84.7%	13.8%	1.4%	3.31
Gender				
Male (n=79)	80.8%	18.0%	1.3%	3.17
Female (n=131	87.0%	11.4%	1.5%	3.39
Age				
50 and under (n=171)	83.7%	14.5%	1.7%	3.28
51 and over (n=39)	89.5%	10.5%	0.0%	3.45
Position				
Dept. Chief (n=25)	87.5%	12.5%	0.0%	3.33
Staff MD (n=142)	85.2%	13.4%	1.4%	3.36
Resident/Intern (n=42)	80.9%	16.7%	2.4%	3.10

*4=agree, 3=agree somewhat, 2=disagree somewhat, 1=disagree

In general, physicians seem to agree with the above statement. This result differs significantly from the responses of the general Armenian population which also tends to agree with the statement but a bit more strongly. The mean score for the general population survey was 3.65 vs. 3.31 for the physician survey. Comparison between the two survey groups yields a p-value of .001. This question addresses the perception that physicians may hold regarding potential damage or harm to the donor. Again, as in the previous statement, this perception that the donor will be significantly worse off can serve as a potential barrier to physicians reassuring and recruiting patients who may offer to donate to a family member.

An analysis by gender reveals no trend in responses with a p-value of .420.

An analysis by age reveals no trend in responses with a p-value of .564.

An analysis by position yields no statistically significant difference in responses. The p-value for this analysis is .911.

It should be legal for an individual to sell one kidney to an unrelated recipient.

	Agree	Disagree	No Opinion	Mean Score*
Total: (n=211)	75.1%	17.2%	7.7%	3.33
Gender				
Male (n=79)	79.5%	12.8%	7.7%	3.43
Female (n=131)	72.3%	20.0%	7.7%	3.26
Age				
50 and under (n=171)	75.3%	17.1%	7.6%	3.34
51 and over (n=39)	74.4%	17.9%	7.7%	3.25
Position				
Dept. Chief (n=25)	56.0%	40.0%	4.0%	2.67
Staff MD (n=142)	75.0%	16.4%	8.6%	3.34
Resident/Intern (n=42)	85.7%	7.1%	7.1%	3.64

*4=agree, 3=agree somewhat, 2=disagree somewhat, 1=disagree

In general, physicians seem to agree with the above statement. The result differs significantly from the responses of the general Armenian population which also tends to agree with the statement but much less strongly. The mean score for the general population survey was 2.32 vs. 3.33 for the physician survey. Comparison between the two survey groups yields a p-value of .001. For physicians, the question of commercialism seems to be outweighed by concerns for those patients who may need transplantation. The fact that most physicians are not concerned by the sale of kidneys should raise the question of motivation for conceding to commercialism. Is there a lack of ethical reservations or is there an overwhelming practicality?

An analysis by gender reveals no trend in responses with a p-value of .409.

An analysis by age reveals no trend in responses with a p-value of .991.

An analysis by position yields a trend in responses that shows that a higher position correlates with decreased agreement with the validity of legalized kidney sales. The p-value for this analysis is .015.

It is possible for a brain dead person to recover from his/her injuries.

	Agree	Disagree	No Opinion	Mean Score*
Total: (n=211)	16.8%	78.0%	5.3%	1.47
Gender				
Male (n=79)	11.5%	87.2%	1.3%	1.32
Female (n=131)	20.0%	72.3%	7.7%	1.57
Age				
50 and under (n=171)	17.6%	78.2%	4.1%	1.50
51 and over (n=39)	12.8%	76.9%	10.3%	1.37
Position				
Dept. Chief (n=25)	8.0%	88.0%	4.0%	1.37
Staff MD (n=142)	16.4%	77.9%	5.7%	1.44
Resident/Intern (n=42)	21.4%	73.8%	4.8%	1.60

*4=agree, 3=agree somewhat, 2=disagree somewhat, 1=disagree

In general, physicians seem to disagree with the above statement. This result differs significantly from the responses of the general Armenian population which also tends to disagree with the statement but a bit more strongly. Among those who held an opinion, the mean score for the general population survey was 2.14 vs. 1.47 for the physician survey. Comparison between the two survey groups yields a p-value of .001. The perception that the a brain dead patient can recover from his/her injuries poses a significant potential barrier if no physician education is undertaken in conjunction with a transplantation program. A much smaller percentage of physicians registered no opinion on the physician survey than for the general population study most likely due to an increased familiarity with the subject.

An analysis by gender reveals that females are more likely to believe that a brain dead patient can recover from his/her injuries. The p-value is .027.

An analysis by age reveals no trend in responses with a p-value of .257.

An analysis by position yields no statistically significant difference in responses. The p-value for this analysis is .684.

Given equal need, a poor person has as good a chance as a rich person of getting an organ transplant.

	Agree	Disagree	No Opinion	Mean Score*
Total: (n=211)	55.9%	42.1%	1.9%	2.65
Gender				
Male (n=79)	61.5%	38.5%	0.0%	2.78
Female (n=131)	53.1%	43.8%	3.1%	2.58
Age				
50 and under (n=171)	58.2%	40.0%	1.8%	2.71
51 and over (n=39)	46.1%	51.3%	2.6%	2.37
Position				
Dept. Chief (n=25)	64.0%	36.0%	0.0%	2.84
Staff MD (n=142)	53.6%	44.3%	2.1%	2.56
Resident/Intern (n=42)	59.5%	38.1%	2.4%	2.83

*4=agree, 3=agree somewhat, 2=disagree somewhat, 1=disagree

In general, physicians seem to agree with the above statement. However, there is a significant percentage of physicians who disagree with the statement as well. This result differs significantly from the responses of the general Armenian population which also tends to agree with the statement but less strongly. The mean score for the general population survey was 2.58 vs. 2.65 for the physician survey. Comparison between the two survey groups yields a p-value of .051. This question addresses the perceived fairness of the system of distribution. Physicians seem less optimistic regarding the equity of the current system.

An analysis by gender reveals no trend in responses. The p-value is .187.

An analysis by age reveals no trend in responses with a p-value of .388.

An analysis by position yields no statistically significant difference in responses. The p-value for this analysis is .804.

Fair distribution of organs is best decided by the surgeon and not by a centralized waiting list.

	Agree	Disagree	No Opinion	Mean Score*
Total: (n=211)	82.7%	15.9%	1.4%	3.42
Gender				
Male (n=79)	85.7%	14.3%	0.0%	3.45
Female (n=131)	80.8%	16.9%	2.3%	3.40
Age				
50 and under (n=171)	81.7%	16.6%	1.8%	3.41
51 and over (n=39)	87.2%	12.8%	0.0%	3.46
Position				
Dept. Chief (n=25)	88.0%	12.0%	0.0%	3.48
Staff MD (n=142)	85.0%	13.6%	1.4%	3.49
Resident/Intern (n=42)	70.7%	26.8%	2.4%	3.15

*4=agree, 3=agree somewhat, 2=disagree somewhat, 1=disagree

In general, physicians seem to agree with the above statement indicating that there may be difficulties in instituting a centralized waiting list unless physician education is instituted in order to convince those involved that centralized lists provide the most equitable and programmatically feasible method of organ distribution and recipient selection.

An analysis by gender reveals no trend in responses with a p-value of .345.

An analysis by age reveals no trend in responses with a p-value of .580.

An analysis by position yields no statistically significant difference in responses. The p-value for this analysis is .259.

Organs for transplant can be bought and sold on the “black market”.

	Yes	No	Don't Know
Total: (n=211)	46.6%	33.7%	19.7%
Gender			
Male (n=79)	51.3%	32.0%	16.7%
Female (n=131)	43.4%	34.9%	21.7%
Age			
50 and under (n=171)	49.7%	32.5%	17.7%
51 and over (n=39)	33.3%	38.5%	28.2%
Position			
Dept. Chief (n=25)	12.0%	44.0%	44.0%
Staff MD (n=142)	19.3%	35.0%	45.7%
Resident/Intern (n=42)	21.9%	24.4%	53.7%

In general, physicians seem to agree with the above statement. This result differs significantly from the responses of the general Armenian population which also tends to agree with the statement but to a lesser degree. Physicians are more likely to believe that a black market in organs exists and are more likely to hold an opinion on the subject. Comparison between the two survey groups yields a p-value of .001.

An analysis by gender reveals no trend in responses. The p-value is .500.

An analysis by age reveals no trend in responses with a p-value of .142.

An analysis by position yields no statistically significant difference in responses. The p-value for this analysis is .523.

For the specific countries named physicians were much less likely than the general population to believe that a black market in organs existed and more likely to admit that they did not know for certain.

**Organs for transplant can be bought and sold on the “black market”
in Armenia**

	Yes	No	Don't Know
Total: (n=211)	45.4%	27.8%	26.8%

**Organs for transplant can be bought and sold on the “black market”
in Russia**

	Yes	No	Don't Know
Total: (n=211)	67.4%	5.3%	27.4%

**Organs for transplant can be bought and sold on the “black market”
in China**

	Yes	No	Don't Know
Total: (n=211)	37.2%	4.3%	58.5%

**Organs for transplant can be bought and sold on the “black market”
in Iran**

	Yes	No	Don't Know
Total: (n=211)	24.5%	12.8%	62.8%

Transplantation programs should now be a priority in Armenia.

	Agree	Disagree	No Opinion	Mean Score*
Total: (n=211)	55.0%	43.8%	1.0%	2.54
Gender				
Male (n=79)	46.1%	53.9%	0.0%	2.27
Female (n=131)	60.8%	37.7%	1.5%	2.73
Age				
50 and under (n=171)	54.7%	44.1%	1.2%	2.53
51 and over (n=39)	56.4%	43.6%	0.0%	2.61
Position				
Dept. Chief (n=25)	40.0%	60.0%	0.0%	2.16
Staff MD (n=142)	57.2%	41.5%	1.4%	2.62
Resident/Intern (n=42)	57.1%	42.8%	0.0%	2.55

*4=agree, 3=agree somewhat, 2=disagree somewhat, 1=disagree

In general, physicians are in mild agreement with this statement. Approximately 44% of those surveyed believe that transplantation should not be a priority in Armenia at this time.

An analysis by gender reveals no trend in responses. The p-value is .111.

An analysis by age reveals no trend in responses with a p-value of .784.

An analysis by position yields no statistically significant difference in responses. The p-value for this analysis is .743.

How likely are you to suggest that your patient should donate their organs after death?

	Likely	Unlikely	No Opinion
Total: (n=211)	69.2%	26.0%	4.8%
Gender			
Male (n=79)	73.1%	23.1%	3.8%
Female (n=131)	66.7%	27.9%	5.4%
Age			
50 and under (n=171)	69.2%	25.5%	5.3%
51 and over (n=39)	69.2%	28.2%	2.6%
Position			
Dept. Chief (n=25)	60.0%	36.0%	4.0%
Staff MD (n=142)	71.5%	25.0%	3.6%
Resident/Intern (n=42)	65.8%	24.4%	9.8%

In general, physicians are likely to suggest donation to their patients. Approximately 26% are still unlikely to suggest donation.

An analysis by gender reveals no trend in responses. The p-value is .134.

An analysis by age reveals no trend in responses with a p-value of .911.

An analysis by position yields no statistically significant difference in responses. The p-value for this analysis is .783.

Is there a particular reason why you would not recommend your patients to donate their organs upon death? What might that reason be?

The following are some of the responses to the question above:

The Patient must decide: 19 mentions

Not my business/I have no right to influence: 10 mentions

Psychologically hard for the patient: 8 mentions

Patients organs are not useful: 7 mentions

Unethical: 5 mentions

Not the right time for Armenia (socio-economic and technical): 5 mentions

Against religion: 2 mentions

Some of the very interesting and eloquent responses to the question follow: “It is anti-humanistic.”, “I am not in charge of it.”, “I don't have the right to influence patients.”, “I’m a surgeon, I cannot advise him.”, “I cannot speak about death.”, “I can’t influence anyone.”, “It’s psychologically difficult.”, “Patients are ill, and their organs are ill.”, “To maintain the psycho-emotional status.”, “To not cause psychological trauma.”, “It will tune a patient towards death.”.

Donors and their families should receive financial incentives for their gift?

	Agree	Disagree	No Opinion	Mean Score*
Total: (n=211)	80.2%	19.8%	0.0%	3.27
Gender				
Male (n=79)	77.9%	22.1%	0.0%	3.26
Female (n=131)	81.4%	18.6%	0.0%	3.28
Age				
50 and under (n=171)	80.9%	19.0%	0.0%	3.30
51 and over (n=39)	76.9%	23.1%	0.0%	3.15
Position				
Dept. Chief (n=25)	72.0%	28.0%	0.0%	3.04
Staff MD (n=142)	81.3%	18.7%	0.0%	3.28
Resident/Intern (n=42)	82.9%	17.1%	0.0%	3.43

*4=agree, 3=agree somewhat, 2=disagree somewhat, 1=disagree

In general, physicians are in agreement with this statement. This reinforces the sense from the question regarding paid kidney donation, that physicians in Armenia do not have the same opposition to commercialism that exists in their counterparts in the US and Europe.

An analysis by gender reveals no trend in responses. The p-value is .546.

An analysis by age reveals no trend in responses with a p-value of .569.

An analysis by position yields no statistically significant difference in responses. The p-value for this analysis is .507.

After organ transplantation the patient can be buried as usual.

	Agree	Disagree	No Opinion	Mean Score*
Total: (n=211)	93.3%	3.4%	3.3%	3.88
Gender				
Male (n=79)	94.9%	2.6%	2.6%	3.92
Female (n=131)	92.3%	3.8%	3.8%	3.86
Age				
50 and under (n=171)	92.3%	3.5%	4.1%	3.88
51 and over (n=39)	97.4%	2.6%	0.0%	3.90
Position				
Dept. Chief (n=25)	100.0%	0.0%	0.0%	3.96
Staff MD (n=142)	91.4%	5.0%	3.6%	3.84
Resident/Intern (n=42)	95.2%	0.0%	4.8%	4.00

*4=agree, 3=agree somewhat, 2=disagree somewhat, 1=disagree

In general, physicians seem to agree with the above statement. This result differs significantly from the responses of the general Armenian population which also tends to agree with the statement but less strongly. This indicates a somewhat lower level of comfort with donation and its impact on burial. The mean score for the general population survey was 3.51 vs. 3.88 for the physician survey. Comparison between the two survey groups yields a p-value of .001.

An analysis by gender reveals no trend in responses. The p-value is .775.

An analysis by age reveals no trend in responses with a p-value of .410.

An analysis by position yields no statistically significant difference in responses. The p-value for this analysis is .327.

It is important for a body to have all of its parts when buried.

	Agree	Disagree	No Opinion	Mean Score*
Total: (n=211)	10.6%	86.5%	2.9%	1.34
Gender				
Male (n=79)	6.5%	89.6%	3.9%	1.20
Female (n=131)	13.1%	84.6%	2.3%	1.42
Age				
50 and under (n=171)	10.1%	87.0%	3.0%	1.33
51 and over (n=39)	12.8%	84.6%	2.6%	1.37
Position				
Dept. Chief (n=25)	0.0%	96.0%	4.0%	1.00
Staff MD (n=142)	13.6%	85.0%	1.4%	1.42
Resident/Intern (n=42)	4.9%	87.8%	7.3%	1.24

*4=agree, 3=agree somewhat, 2=disagree somewhat, 1=disagree

In general, physicians seem to disagree with the above statement. This result differs significantly from the responses of the general Armenian population which also tends to disagree with the statement but less strongly. This indicates a somewhat lower level of comfort with donation and its impact on burial. The mean score for the general population survey was 1.98 vs. 1.34 for the physician survey. Comparison between the two survey groups yields a p-value of .001.

An analysis by gender reveals no trend in responses. The p-value is .282.

An analysis by age reveals no trend in responses with a p-value of .875.

An analysis by position yields a trend in responses that points to decreased disagreement with the statement. This seems to indicate a greater discomfort with the idea of removing organs from the cadaver before burial. The p-value for this analysis is .051.

Chapter V

Discussion and Recommendations

5.1 Discussion and recommendations for legislation

Although transplantation may not be a public health priority, the regulation and legislation of activity should be. In order to avoid commercialism in transplantation, the Council of the Transplantation Society has suggested that every country take on the responsibility to promote laws which educate personnel, develop national registries, legislate accountability by professionals and institutions on donation and transplant practices and maintain an adequate database that allows for annual reports. (55) The Council stresses that this responsibility be legal and not voluntary.

In many cases, it seems that transplant surgeons and patients are the ones who are insisting that the legal groundwork be laid down in order for the development of transplantation programs to proceed. In Israel, the Hadassah Medical Organization worked with the Chief Rabbinate in order to define death and set down guidelines for transplantation. Dr. Penchas states, eventually the health care system must intervene and formulate a national system based on principles and guidelines for the benefit of all. (56) This has also been the case in Armenia where legislation has been drafted and introduced by interested parties. Dr. Babloyan of the Arabkir Hospital and Dr. Malayan of the Ophthalmologic Institute have been instrumental in formulating the current draft law and in securing a written statement regarding transplantation from the religious authorities in Etchmiadzin.

The current draft law would establish an opt-out system. There should be ethical concerns as well for an opt-out system that does not have an acceptable and reliable system in place for registering dissent. Computerized registries of the population are not well developed in the Republic. An opt-out system depends on a comprehensive and accurate registry in order to avoid the obvious and undesirable mistakes that would result from inappropriate harvesting of organs. The Ministry needs to formulate and implement a reliable method of registering dissent in advance of the expansion of transplantation activity.

Overall, there appears to be support for a law to legalize cadaveric organ donation and transplantation. 70.4% of the population would support such a law. 17.1% did not know whether or not they would support such a law. Clearly, there is an unfamiliarity with the subject in general. The current draft law is a presumed consent, or opt-out law. Given the results of our survey, extensive public education will be necessary in order to ensure the acceptability of such a system. The response to the statement “All people should be considered donors unless they express their desire not to be before their death” showed that 40.7% of the population disagreed with the statement. Another 6.2% expresses no opinion in reaction to the statement. The statement, “The organs of a deceased individual do not belong to the individual but should be used for the good of others” showed that 58% of respondents disagreed with the statement. It seems that there is precedent for such a presumed consent law during Soviet times when the body became the property of the state. It is unclear if the former policy serves to make the public wary of attempts to limit autonomy in this regard.

The logistics of how a transplantation program is to be organized remains to be legislated. Of importance will be the certification of professionals and of medical centers, maintenance of registries, and centralization of wait-lists.

5.2 Discussion and recommendations to decrease public barriers

It will be essential to educate the public about the need that exists in Armenia. Given little exposure to the subject, Armenians seem open to the idea of organ donation. Part of this public education campaign will require documentation of the need for organ transplantation. This documentation has been inadequate to date given the poor to non-existent access to transplantation. Specialists that treat end-stage renal and liver patients must serve as key informants and information sources. Once the need is established the Ministry can begin to educate the public about a problem of which they know little. 47.5% of those polled said they would like to donate their organs upon their death. 38.2% of the population states that in the absence of an advance directive, they would be willing to donate the organs of a loved one to a stranger in need. Strong ties to family indicated that respondents were willing to donate a kidney to family members in need. This indicates that transplantation programs using living related donors should be quite successful. Overall, 91.7% of those polled would donate a kidney to their child.

Clearly, with even more education the Armenian public will be very receptive to the idea of organ donation. When the possible sources of disseminating information are examined it is clear that the public feels most comfortable receiving information directly from doctors. The church also rates highly in terms of trustworthiness. The ruling of the church and its impact on the public awareness and willingness to donate will be important in the months to come. Almost 23% of the population believes that organ donation is against their religion despite the current views of the church. TV and radio seem to be responsible for the awareness that does exist in the public although, in general, the public is skeptical of the credibility of information obtained from the TV and radio. The

government is not viewed as a trustworthy source of information. This must be taken into account when public information campaigns are planned.

Several technical aspects of transplantation must be addressed with the public. There seems to be a feeling that donors suffer from a decline in longevity and in quality of life. This perception may in part be true. This concern must be addressed by public information as well as via improvement of the current state of care for donors. A large percentage of those registered no opinion regarding the ability of a brain dead person to recover from injuries. Clearly, the public needs to be educated regarding the definition and meaning of brain death. As brain death has not been legislated in Armenia, very few citizens are aware of the concept.

Social taboos seem to be present to a mild extent and are quite similar to the opinions registered by the Partnership for Organ Donation. 15.7% of the population disagreed with the statement “After organ transplantation the patient can be buried as usual”. 20.4% of the population felt that “it is important for a body to have all of its parts when buried”. 36.6% of the population worries that organ donation is disfiguring to the deceased individual. There seems to be some interesting views on death and disease within the Armenian population. The idea that one’s organs are too sick to be donated was a common theme. Death was such an unpleasant thought that it prevented willing donors from discussing their wishes with their family. 22.8% of those polled were unwilling to discuss organ donation with their families. 70.5% of the population agreed with the statement “thinking about your own death makes you uncomfortable” compared to 36% of the American population surveyed.

In regards to commercialism, 48.7% of those surveyed believed that it was acceptable for an individual to sell one kidney to an unrelated recipient. However, only 10.1% said that

financial incentives would make them more likely to donate the organs of a loved one. 65.1% said that incentives would have no effect.

5.3 Discussion and recommendations to decrease professional barriers

Physicians seem supportive of legislation to support transplantation. 85.8% would agree with a new law to legalize transplantation. Most physicians surveyed had heard or read about organ donation. The sources of information that were mentioned by the physicians were not so different from the sources named by the general public. The overall impression was that there is not that much time devoted to studying the subject at medical school and that most information comes from popular sources. In general, physicians showed the most confidence in other physicians as a source of information. They viewed both the government and TV and radio more favorably than did the general public. Physicians tended to trust the church less than did the general public.

There seems to be more support for presumed consent among physicians with 59.7% agreeing that “all people should be considered donors unless they express their desire not to be before their death”. Physicians also tend to agree more strongly (49.8% vs. 38.6%) with the idea that the “organs of a deceased individual do not belong to the individual but should be used for the good of others.” The results from these two opinion statements seem to echo the older Soviet rulings. Physicians seem to feel that the body is more state property than the property of the family.

75.1% of physicians surveyed believe that it should be legal for an individual to sell one kidney to an unrelated donor. This belief underlines the need for legislation that prevents commercialism but also raises some of the questions outlined in the discussion on policy. There appears to be a difference in the belief of physicians in Armenia when compared to

other doctors around the world. 80.2% believe that patients and their families should receive a financial incentive for their gift.

Questions regarding the equity of distribution show that physicians believe that wait-list are best maintained by surgeons and not by a central list. This point of view might prove difficult to overcome unless central wait-lists are legislated into being. In response to the statement, “given equal need, a poor person has as good a chance as a rich person of getting an organ transplant” 55.9% of the population was in agreement. This is a surprising number given the obvious inequities that are unavoidable in the current private pay system.

26% of those surveyed are unlikely to suggest that a patient donate their organs after death. This reluctance is often due to a fear that the patient will be adversely effected from a psychological point of view. Also, doctors seem to share the view of the general public that their patients’ organs are sick and therefore, not useful.

The social taboos seen in the general public exist to a milder degree in the physician population. 3.4% of those surveyed believe that a patient cannot be buried as usual after organ donation. 10.6% believe that it is important for a body to have all of its parts when buried.

Although there was agreement that organ donation is beneficial to the recipient, there was also concern that the donor suffers from a decline in longevity and quality of life. 94.3% of physicians surveyed agreed with the statement, “Most people who receive transplants gain additional years of healthy life.” In regards to the donor, 69.2% of physicians agreed with the statement, “Donation of a kidney is associated with a significant decline in longevity of the donor” while 84.7% agreed that “donation of a kidney is associated with

a significant decline in the quality of life of the donor.” Decreasing physician concern for the donor can only come by improving the long term medical care for donors as well as providing transparent information about national complication rates once transplantation programs are active. There seems to be a general discomfort in answering technical questions relating to organ donation that belies the need for familiarity with current transplantation literature. 16.8% of physicians believe that a brain dead individual can recover from his injuries indicating a true need for education on this subject. When questioned about the specifics survival of cadaver vs. living donor transplants, physicians were reluctant to answer. For the two technical questions that were asked approximately 67.3% and 43.5% registered no opinion reflecting this discomfort with the current literature in this area.

The discomfort in terms of answering technical questions coupled with a concern for the welfare of the donor will be a major barrier to overcome. Physicians who are unable to inform and patients and families are unlikely to approach them for donor recruitment. Use of the European Donor Hospital Education Program created in 1991 to improve training and decrease refusal rates has been instituted in 30 countries. The tool has been translated into 17 languages. It has been useful in training critical care staff to feel more confident in dealing with donors’ families, to request donation, and to understand brain dead criteria and legal and religious objections to donation in the respective countries. (57) This program could help in overcoming the discomfort that physicians will feel with the continuing advancement of transplantation programs in Armenia.

5.4 Discussion and recommendations to decrease policy barriers

As was mentioned previously, the main barrier to policy is financial. A national effort to finance transplantation seems unlikely and impractical at this juncture. However, there

are significant policy steps that can be taken. Centralization of wait-lists, delineation of the qualifications needed to qualify as a certified transplant center, and development of a practical system to register dissent are clear priorities for the Ministry of Health. In regards to the certification of hospitals Armenia has some models at its disposal to aid in the process of evaluation. The Donor Action Programme was started in 1993 in Europe. The program provides the resources necessary to individual hospitals who wish to evaluate their potential as organ referral and transplantation centers. Hospitals are provided with, tools, resources and guidelines. The program begins with an on-sight committee which performs an assessment of the current state of activities. Some of the tools used are medical record review, survey of critical care and other staff regarding attitudes toward donation and comfort with concepts necessary for organ donation recruitment. The information gathered forms the basis to develop programs for improvement in key areas of organ donation recruitment. There is also a protocol for ongoing monitoring and improvement in the areas of, donation process, donor detection, referral, communication with family, donor maintenance and organ retrieval. (58) This program seems to be of great value especially at the hospital level as individual hospitals begin to think through their potential contributions to a national program within the Republic of Armenia.

5.5 Armenia's role within the geographic/logistic sphere and organ transplantation activities in the world?

There are currently two major regional transplantation societies. The Middle East Society for Organ Transplantation which is affiliated with the International Transplantation Society and the Arab society for Nephrology and Renal Transplantation. Armenia finds itself in a politically difficult position as a Christian nation among Muslim nations and also as a nation virtually isolated by poor relations with neighboring countries

with the exception of Iran to the South. Also, in contrast to its wealthier neighbors to the south Armenia is in a difficult position in terms of being able to finance the transport of both patients and organs if any system of regional organ sharing is to succeed. Embryonic efforts at organ sharing have now taken place between, Saudi Arabia, Kuwait and Oman. Towards the end of developing beneficial organ sharing systems it is recommended that each “country should strive to have a central coordinating body, consensus and written guidelines, cooperation between units, political support, budgetary help, consent and help of religious leaders (especially with regards to brain death criteria), a professional cadre of coordinators and ethically acceptable incentives to increase cadaver donations.” Daar stresses that each country should, 1) involve patients on wait-lists to educate the public, 2) involve the public, 3) seek public donations 4) ask the President or Prime Minister to set up a fund 5) use driver’s license to identify donors, adopt presumed consent legislation in any country which seems culturally ready to do so.” (59)

The following non renal transplant activity appears to be underway in the Middle East. Non-renal organ transplantation programs include: Israel for heart, liver and lung, Saudi Arabia for liver, heart, lung, heart valves), Tunisia, heart, Turkey, heart and liver, Jordan , heart. Bone marrow transplantation programs exist in Saudi Arabia, Cyprus, Israel, Oman, and Iran. (60)

Transplantation in neighboring Turkey is defined by Laws No 2238 and 2594 as outlined in the section on legislation. The first cadaveric transplantation was carried out in 1979. Since that time the following societies have been founded in Turkey, The Turkish Transplantation and Burn Foundation, The Haberal Education Foundation, The Middle Eastern Society of Organ Transplantation and the Turkish Organ Transplantation Society. According to the report by Haberal, Turkey is now carrying out transplantation in kidneys, cornea, liver including segmental living related transplantation, heart, pancreas,

skin, and bone marrow. Like Armenia, Turkey was confined for many years by lack of legislation to carrying out only living related kidney transplants. (61)

An analogous situation to Armenia seems to exist in Estonia where an active living donor kidney program has been underway from 1990 in the absence of any legal framework. Estonia is a small country covering 45,266 square kilometers and with a population less than half the size of the population of Armenia, namely 1.52 million. The rate of chronic renal failure is 40-50 patients per million annually. Brain death criteria was adopted in 1994 but legislation regarding cadaveric donation is still pending. (62)

5.6 Conclusions

The major barriers facing Armenia seem to be the financial constraints of a bare-bones public health system, a lack of transplant legislation, a lack of infrastructure, a lack of physicians and nurses familiar with recruitment and long term management of transplant programs, a lack of public awareness and a relative political isolation in terms of developing regional transplant programs with its neighbors. Passing of legislation will insure that commercialism does not prevail under very difficult economic conditions. In addition, it will pave the way to international professional collaboration and ability to participate in the developing regional efforts, politics aside. Our two surveys show a remarkably open and generous view of organ donation. It is clear from our results that the Armenian people are willing to learn and to open their minds to a subject to which they have had very little exposure. It is our hope that his study will serve to inform interested parties within and outside of the Republic of Armenia who hope to help the many patients in need by the development of transplantation programs that will be ethical, efficient, sensitive and fair.

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Appendix I

Survey Instruments

DOCTORS' QUESTIONNAIRE
ORGAN DONATION AND TRANSPLANTATION

Date of interview _____
Code of the interviewer _____
Time started _____
Time ended _____

GENERAL INFORMATION

Sex (circle one)
female male

Specialty _____

Age _____

Name of the hospital/institute _____

Your religions _____

1. Republican

2. Municipal

Date of graduation _____

Place of living

Position

city _____

1. Chief of the department

village _____

2. Attending physician

3. Clinical resident

4. intern

Candidate of medical sciences

Yes ___ No ___

Doctor of medical sciences

Yes ___ No ___

NOTE

Organ transplantation is accepted in the world. Many people donate one of the kidneys to their relatives and unrelated recipients. Organ transplantation after death can be carried out by will, or by the will of the family of the deceased or without any expressed permission in some European countries.

1. In the past, have you ever read,
heard or seen any information about organ donation

a. Yes ___ No ___ (if no, go to the next question)

b. From which sources

3. Would you agree with the new law, which
would legalize organ donation for
transplantation after death

a. Yes

b. No

c. Don't know

2. Please rate the trustworthiness of the following sources in general:

	Very trustworthy	Trustworthy	non-trustworthy	don't know	no opinion
a. government					
b. TV/radio					
c. doctors					
d. church					

YOUR OPINION ABOUT THE FOLLOWING POINTS

4. All people should be considered donors unless they express their desire not to be before their death.

- a. I Agree
- b. I Agree somewhat
- c. I disagree somewhat
- d. I disagree
- e. No opinion

5. The organs of a deceased individual do not belong to the individual but should be used for the good of others.

- a. I Agree
- b. I Agree somewhat
- c. I disagree somewhat
- d. I disagree
- e. No opinion

6. Most people who receive transplants gain additional years of healthy life.

- a. I Agree
- b. I Agree somewhat
- c. I disagree somewhat
- d. I disagree
- e. No opinion

*The following two questions address the living donor.
For example, the donor of one kidney.*

7. Donation of a kidneys is associated with a significant decline in longevity of the donor

- a. I Agree
- b. I Agree somewhat
- c. I disagree somewhat
- d. I disagree
- e. No opinion

8. Donation of a kidney is associated with a significant decline in quality of life of the donor.

- a. I Agree
- b. I Agree somewhat
- c. I disagree somewhat
- d. I disagree
- e. No opinion

9. Half the kidneys transplanted from a cadaver become non-functioning in

- a. 1 year
- b. 4 years
- c. 8 years
- d. 10 years
- e. Don't know

10. Kidneys from living related donors in general have a survival longer than cadaver kidneys by:

- a. 10%
- b. 20%
- c. 30%
- d. 50%
- e. more than 50%
- f. Don't know

11. It should be legal for an individual to sell one kidney to an unrelated recipient.

- a. I Agree
- b. I Agree somewhat
- c. I disagree somewhat
- d. I disagree
- e. No opinion

Very often when the brain cells of a patient die, the patient becomes a candidate for organ transplantation. When the brain stops performing it's vital function such as breathing, regulation of the heart, it is considered brain death, in which case, the body of the patient may stay alive only by artificial assistance.

12. It is possible for a brain dead person to recover from his/her injuries.

- a. I Agree
- b. I Agree somewhat
- c. I disagree somewhat
- d. I disagree
- e. No opinion

13. Transplantation operations are expensive procedures. Who should bear the cost of transplantation?

- a. the patient (or his family)
 - b. the government
 - c. private insurance
 - d. Other
-

14. Given equal need, a poor person has as good a chance as a rich person of getting an organ transplant.

- a. I Agree
- b. I Agree somewhat
- c. I disagree somewhat
- d. I disagree
- e. No opinion

Willingness to recommend donation

18. How likely are you to suggest that your patient should donate their organs after death?

- a. Very likely (go to question 20)
- b. Somewhat likely
- c. Not very likely
- d. Not at all likely
- e. No opinion

19. Is there a particular reason you would not recommend your patients to donate their organs upon death? What might that reason be?

20. Donors and their families should receive financial incentives for their gift

- a. I Agree
- b. I Agree somewhat
- c. I disagree somewhat
- d. I disagree
- e. No opinion

15. Fair distribution of organs is best decided by the surgeon and not by a centralized waiting list.

- a. I Agree
- b. I Agree somewhat
- c. I disagree somewhat
- d. I disagree
- e. No opinion

16. Organs for transplant can be bought and sold on the "black market"?

Yes _____ No _____ Don't know _____

If yes, then in what country?

- | | | | |
|------------|-----------|----------|------------------|
| a. Armenia | Yes _____ | No _____ | Don't know _____ |
| b. Russia | Yes _____ | No _____ | Don't know _____ |
| c. China | Yes _____ | No _____ | Don't know _____ |
| d. Iran | Yes _____ | No _____ | Don't know _____ |
| e. Other | _____ | | |

17. Transplantation programs should now be a priority in Armenia.

- a. I Agree
- b. I Agree somewhat
- c. I disagree somewhat
- d. I disagree
- e. No opinion

21. After organ transplantation the patient can be buried as usual.

- e. I Agree
- f. I Agree somewhat
- g. I disagree somewhat
- h. I disagree
- i. No opinion

22. It is important for a body to have all of its parts when buried.

- a. I Agree
- b. I Agree somewhat
- c. I disagree somewhat
- d. I disagree
- e. No opinion

ARMENIA QUESTIONNAIRE
ORGAN DONATION AND TRANSPLANTATION

Date of interview _____
Code of the interviewer _____
Time started _____
Time ended _____

GENERAL INFORMATION

Sex (circle one)
female male

Religion _____

Age _____

Education
a. high school
b. technical school or undergraduate university
c. university

Place of residence
city _____
village _____

NOTE

Organ transplantation is accepted in the world. Many people donate one of the kidneys to their relatives and unrelated recipients. Organ transplantation after death can be carried out by will, or by the will of the family of the deceased or without any expressed permission in some European countries.

1. In the past, have you ever read, heard or seen any information about organ donation

a. Yes _____ No _____ (if no, go to the next question)

b. What was the source of the information?

3. Would you agree with the new law, which would legalize organ donation for transplantation after death
a. Yes
b. No
c. Don't know

2. Please rate the following sources of information by the level of trustworthiness.

	Very trustworthy	Trustworthy	non-trustworthy	don't know	no opinion
a. government					
b. TV/radio					
c. doctors					
d. church					

YOUR OPINION ABOUT THE FOLLOWING POINTS

4. Organ donation allows something positive, to come out of a person's death

- a. I agree
- b. I agree somewhat
- c. I disagree somewhat
- d. I disagree
- e. No opinion

5. Organ donation helps families cope with their grief

- a. I agree
- b. I agree somewhat
- c. I disagree somewhat
- d. I disagree
- e. No opinion

6. All people should be considered donors unless they express their desire not to be before their death.
 - a. I Agree
 - b. I Agree somewhat
 - c. I disagree somewhat
 - d. I disagree
 - e. No opinion
7. The organs of a deceased individual do not belong to the individual but should be used for the good of others.
 - a. I Agree
 - b. I Agree somewhat
 - c. I disagree somewhat
 - d. I disagree
 - e. No opinion

The following questions regarding organ transplantation don't require any previous knowledge. Answer the questions according to your feelings.

8. Most people who receive transplants gain additional years of healthy life.
 - a. I Agree
 - b. I Agree somewhat
 - c. I disagree somewhat
 - d. I disagree
 - e. No opinion

Since we have two kidneys, any one of us can choose to donate one of our kidneys as a living donor.

9. Donation of a kidney is associated with a significant decline in longevity of the donor.
 - a. I Agree
 - b. I Agree somewhat
 - c. I disagree somewhat
 - d. I disagree
 - e. No opinion
10. Donation of a kidney is associated with a significant decline in quality of life of the donor.
 - a. I Agree
 - b. I Agree somewhat
 - c. I disagree somewhat
 - d. I disagree
 - e. No opinion

11. It should be legal for an individual to sell one kidney to an unrelated recipient.
 - a. I Agree
 - b. I Agree somewhat
 - c. I disagree somewhat
 - d. I disagree
 - e. No opinion

12. Organ transplantation in the world is an experimental medical procedure.
 - a. I Agree
 - b. I Agree somewhat
 - c. I disagree somewhat
 - d. I disagree
 - e. No opinion

13. Organ transplantation is against your religion.
 - a. I Agree
 - b. I Agree somewhat
 - c. I disagree somewhat
 - d. I disagree
 - e. No opinion

14. People of your age are too old to donate.
 - a. I Agree
 - b. Agree somewhat
 - c. I disagree somewhat
 - d. I disagree
 - e. No opinion

Very often when the brain cells of a patient die, the patient becomes a candidate for organ transplantation. When the brain stops performing it's vital function such as breathing, regulation of the heart, it is considered brain dead, in which case, the body of the patient may stay alive only with artificial assistance.

15. It is possible for a brain dead person to recover from his/her injuries.
 - a. I Agree
 - b. I Agree somewhat
 - c. I disagree somewhat
 - d. I disagree
 - e. No opinion

16. After organ transplantation the patient can be buried as usual.
 - a. I Agree
 - b. I Agree somewhat
 - c. I disagree somewhat
 - d. I disagree
 - e. No opinion

17. It is important for a body to have all of its parts when buried.
- I Agree
 - I Agree somewhat
 - I disagree somewhat
 - I disagree
 - No opinion

18. You are worried that a loved one's body would be disfigured if their organs were donated.
- I Agree
 - I Agree somewhat
 - I disagree somewhat
 - I disagree
 - No opinion

Willingness to Donate

19. Would you like to donate your organs after your death?
- Yes (go to question 21)
 - Maybe
 - It's impossible
 - no
 - don't know
20. If you do not wish to donate your organs after your death, what is the reason(s)
- _____
- _____
- _____

21. Would you accept an organ transplantation?.
- Yes _____ No _____ Don't know _____

22. In the future animal organs may be transplanted in the place of human organs. Would you accept a transplantation of an animal organ?.
- Yes _____ No _____ Don't know _____

23. Thinking about your own death makes you uncomfortable.
- I Agree
 - I Agree somewhat
 - I disagree somewhat
 - I disagree
 - No opinion

24. In some countries the deceased person;s directions are not enough to donate organs, the family members have the final word. If your loved one gave directions before death to donate their organs would you donate their organs upon their death to
- his/her relatives
yes ___ no ___ don't know ___ refused to answer ___
 - a stranger in need
yes ___ no ___ don't know ___ refused to answer ___

25. In the absence of an advance directive would you donate the organs of your family members upon their death to:
- his/her relatives
yes ___ no ___ don't know ___ refused to answer ___
 - a stranger in need
yes ___ no ___ don't know ___ refused to answer ___

26. Would you be willing to donate one of your kidneys while alive to
- husband/wife yes ___ no ___ don't know ___
refused to answer ___
 - your child yes ___ no ___ don't know ___
refused to answer ___
 - your father yes ___ no ___ don't know ___
refused to answer ___
 - your mother yes ___ no ___ don't know ___
refused to answer ___
 - your grandma yes ___ no ___ don't know ___
refused to answer ___
 - your grandpa yes ___ no ___ don't know ___
refused to answer ___
 - your aunt yes ___ no ___ don't know ___
refused to answer ___
 - your uncle yes ___ no ___ don't know ___
refused to answer ___
 - a close friend yes ___ no ___ don't know ___
refused to answer ___
 - a stranger in need yes ___ no ___ don't know ___
refused to answer ___

27. Most members of your family support the idea of organ donation
- I Agree
 - I Agree somewhat
 - I disagree somewhat
 - I disagree
 - No opinion

28. How willing are you to discuss organ donation with your family members.
- Very willing (go to the question 30)
 - Somewhat willing
 - Somewhat unwilling
 - Not willing
 - No opinion
29. Is there a particular reason why you are unwilling to discuss organ donation with your family? (asked to all those who are somewhat unwilling and not willing?)
- _____
- _____
- _____
30. Would financial incentives make you more or less likely to donate a family members' organs or would it have no effect?
- More likely
 - Less likely
 - No effect
 - Don't know
31. Would financial incentives make you more or less likely to donate your own organs or would it have no effect?
- More likely
 - Less likely
 - No effect
 - Don't know

Financial Concerns

32. Transplantation operations are expensive procedures. Who should bear the cost of transplantation?
- the patient (or his family)
 - the government
 - private insurance
 - Other
- _____
33. Given equal need, a poor person has as good a chance as a rich person of getting an organ transplant.
- I Agree
 - I Agree somewhat
 - I disagree somewhat
 - I disagree
 - No opinion
34. Organs for transplant can be bought and sold on the "black market".
- Yes_____ No_____ Don't know _____
- If yes, then in what country?
- Armenia Yes_____ No_____ Don't know _____
 - Russia Yes_____ No_____ Don't know _____
 - China Yes_____ No_____ Don't know _____
 - Iran Yes_____ No_____ Don't know _____
 - Other _____

Appendix II

Recruitment and training

Job Description:**Research Consultant**

Will assist Principle Investigator to administer two surveys in the city of Yerevan. The first survey will be administered to physicians in both the Ministry and City Hospitals. The second survey will be administered in households in all districts of Yerevan. In addition, Research Consultants will be responsible for entering data, translating, assisting with focus group administration, and coordinating daily activities if need be.

Dates: From 6/27-7/12

Hours: 9am-14:30pm Monday-Friday

9am-18:00pm Saturday and Sunday

Hours are very strict and essential to completion of the project. The Principle Investigator reserves the right to withhold the stipend should attendance be late or inconsistent.

Stipend: \$100 on completion of the project contingent on timely and consistent attendance.

The cost of transportation will be the responsibility of the Research Consultant.

The start place for each work day will be decided at 3:00 (before class) the day before. For example work to be done on Tuesday will be planned on Monday at 3:00 before the class starts. In this way the consultant can travel directly to their start place the following morning.

Verbal Consent Form

I am a student at the American University of Armenia School of Public Health. I am working with a project from the Yale University School of Medicine that would like to understand how the Armenian people view organ transplantation and donation. It is our hope that with this information we can help the people of Armenia to receive equitable care and consideration with regard to organ transplantation. I would appreciate it if I could take a few minutes of your time to ask you some questions.

If at any time during the interview you wish to discontinue the interview you are free to do so, no questions asked. if you feel that you do not wish to answer any one of the questions posed to you are also free to do so, no questions asked.

All of your responses to the questions will be kept confidential and no identifying information of any kind will be recorded on the interview form.

Thank you for your time.

Guidelines for the Administration of the Surveys

1. The survey will be administered orally. No questions will be asked by allowing the interviewee to read the question on their own.
2. No elaboration or examples will be used to clarify questions. The response to a request for elaboration should be addressed by saying: “ I can repeat the question but I cannot supply you with any further information. Please answer the question to the best of your ability given the answers provided.” **Failure to adhere to this rule will result in useless data as every participant will have answered the question given differing amounts of information.**
3. There is a subtle difference between the answer I don’t know and a refusal to answer. Refusal to answer will be noted on the question even if there is no express choice noted. No questions will be asked regarding the reason for the refusal to answer.
4. No answers to questions will be questioned for their motivation. The interviewer will not engage in any discussion of the answer that is given but will treat all answers in a neutral manner in speak and in body language.
5. All answers to questions and all participation in the survey will be kept confidential. There will be no discussion of answers that involves identifying information regarding the respondent.
6. All refusals to participate will be noted in a log that identifies place, (hospital or apt building), date, and time as well as the number in the cluster.
7. Selection of participants will occur as follows for the physician survey:
8. Find the Director of the Hospital
9. Introduce yourself and the project, show the Minister’s letter, give them my card.
10. Ask for a comprehensive number of how many physicians total work at the hospital. Record this number.
11. Ask them for a comprehensive list of the different departments in the hospital. Be sure to ask if any there are any physicians that practice there independently of a department. If such a list is not available write one out by hand so that we have a record of this. Using your random number table choose a number and then a department. In the case of two clusters in the same hospital the random selection will be done twice. It is perfectly acceptable to randomly pick the same department for both random samples. If there are no department as might be the case with the Emergency Gayane attempt to ascertain some kind of organization breakdown that will allow for facilitated random selection such as teams, etc.
12. Find out the name of EVERY doctor and resident in that department, note them down on a list and choose one at random using the random number table.
13. Visit this doctor to begin administration of the questionnaire. If the doctor is not there you will proceed to the next physically close physician to administer the survey. Make careful notes of any refusals to participate but do not record names.
14. Introduce yourself and be sure to make all of the following points: Who you are, where you are from, the reason for the survey, participation is voluntary, and

CONFIDENTIAL. At any time the respondent can choose to quit the survey or to not answer any one question in particular they are of course free to do so. Always find a quiet, private place to administer the survey. If you are interrupted for any length of time try to resume the survey if the participant is willing. If the survey remains incomplete for any technical reasons you must submit a written reason for non-completion of the survey. If the survey remains incomplete because the respondent wished to withdraw this should be noted without further questioning of the respondent

15. Once one survey is complete you will approach the next physically close physician and attempt to gain their consent to participate. No one physician should be interviewed twice. Once they are interviewed they are removed from the pool of eligibility regardless of physical proximity.
16. Proceed with this method until a sample of seven participants is obtained for each cluster.
17. Proceed to the second or third cluster start point as need be.

Appendix III Sampling Methodology

Sampling for General Public Survey

Hamaik

	Population	Percent of Total	Clusters	List
1. Gendrone	181,000	13.1	7	Yes
2. N. Marash	146,000	10.6	6	Yes
3. Erebuni	136,800	9.9	6	Yes
4. Malatia	159,600	11.6	6	Yes
5. Achapniack	125,700	9.1	5	Yes
6. Davitashen	50,800	3.7	2	Yes
7. Nor Nork	131,200	9.5	5	Yes
8. Avan	50,500	3.7	2	Yes
9. Arabkir	151,600	11.0	6	No*
10. Zeytoon	102,500	7.4	4	Yes
11. Shenkavid	145,100	10.5	6	Yes
Total:	1,380,800	100.1%	55	

* We were unable to obtain a list at the Arabkir town hall and so we chose our clusters based on the methodology outlined in the text.

**Hamaik Town Hall Contact List
Addresses, Chiefs, Phone and Contacts**

1. Gendrone 44 Derian Street at the corner of Sayat Nova

Chief: Ararat Zourabian 52-65-33

Contact: Baron Melikyan

2. N. Marash 200 Amarontsaiene

Chief: Armenak Armenakian 65-53-93

Contact: Sourig work: 65-40-62, home: 65-12-79

3. Ereboundi 87 Sassouni Davit

Chief: Ararat Khrimian 57-56-58

4. Malatia 32 Sepastia

Chief: Vahan Zartikian 77-30-35, 77-67-07

Contact: Haroutoun Markarian 77-73-81

5. Achapniak Ara Sarksian Street

Chief: Atzaroun Katchatrian 39-21-00

Contact: Levon Navardassarian (jeck) Ashod Sarkisian (communities)

6. Davitashen Chief: Rouben Kevorkian 35-21-44

Contact: Baron Movsessian, Susanna Martirossian 34-31-63, Souren Gabrielian

7. Nor Nork 11 Gaya Street

Chief: Mgerditch Minassian 64-87-45

Contact: Gagik Casparian 64-49-62

8. Avan Avanin Sahakian Taramas

Chief: Rouben Hairapetian 22-06-83 Secretary: Varshig: 62-52-10

Contact: Garig Khatchigyan work: 62-07-60, home: 23-74-89 Baron Barshegian 62-60-50

9. Arabkir 27 Naira Zarian

Chief: Haig Hovanessian 28-11-30, 28-01-51

Contact: Margeretta Haroutounian, Haig Khatrachian 28-40-90, Adrine 28-14-67

10. Zeytoon 3 Aharonian

Chief: Rouben Sinoyan 28-43-10, 28-01-07

Contact: Baron Maghrakian

11. Shenkavid 26 Neshdasi

Chief: Baghrab Andreassian 44-14-53 or 44-14-93

Contact: none

Details of Methodology and Random Selection for General Population Survey

Hamaik

		<u>Population</u>	<u>Percent of Total</u>	<u>Clusters</u>
1. Gendrone	52-65-33	181,000	13.1	7
Visit the office, chose from the list that was in the office-collected yearly. Clusters were randomly chosen by building.				
2. Nork Marash	65-53-93	146,000	10.6	6
Information collected from 4 liazors by visiting them. Since there were no tall buildings everything is divided up by liazor and not by jeck. Clusters were randomized by street and then by number of the house.				
3. Erebuni	57-56-58	136,800	9.9	6
List was collected by the city DOH randomization was by street and address on that street then by floor, then by apartment.				
4. Malatia-Sepastia	77-30-35	159,600	11.6	6
Visited the office chose from the list that was in the office-collected yearly. Clusters were randomly chosen by building.				
5. Achapniack	39-21-00	125,700	9.1	5
List was prepared for private houses by street and by jeck and street for the public buildings. Randomization was by street then building.				
5 Jecks, 6 communities				
6. Davitashen	35-21-44	50,800	3.7	2
3 jecks-1 is a village, 4 taramas, 2-3 condominiums				
7. Nor Nork	64-87-45	131,200	9.5	5
11 jeck, condos, 4 separate houses total-left out of our sample				
8. Avan	62-60-50	50,500	3.7	2
3 jecks, 2 committees, 7 condominiums				
9. Arabkir	28-11-30	151,600	11.0	6
10. Zeytoon	28-43-10	102,500	7.4	4
List was prepared for private houses by street and by jeck and street for the public buildings. Randomization was by street then building.				
11. Shenkavid	44-14-93	145,100	10.5	6
List was collected by the city DOH randomization was by street and address on that street then by floor, then by apartment.				
Total:		1,380,800	100.1%	55

Preliminary List of all Hospitals in Yerevan For Cluster Sampling Physician Survey

Masiv First Care Hospital	City
Erebuni Hospital	City
Malatia Hospital	City
Republic Hospital	Ministry
City Psychiatry	City
Republic Hospital for Skin Disorders	Ministry
No 2 Hospital	City
No 3 Hospital	City
No 8 Hospital	City
Infection (adult)	City
No 4 Hospital	City
Physiotherapy Hospital	Ministry
4 Special Hospital	Special
Posttrama Hospital	Special
Stomatology Centre	Ministry
Republic Opthamologic Institute	Ministry
Psychiatry	City
Republic Psychiatry	Ministry
Narcology	City
Oncology Dipsensery	Ministry
Family Medicine Dispensery, Sexology, and Marital Clinic	Ministry
No 1 Factory Hospital	Factory
No 4 Factory Hospital	City
No 5 Factory Hospital	City
Emergency Center-Minassian	City
Emergency Center Gayane	City
No 1 University Hospital	University
Proctology Institute	Ministry
Traumatology Institute	Ministry
Surgery Institute	Ministry
Hygenic Hospital	Ministry
Gynecology (mat and child health)	Ministry
Cardiology Institute	Ministry
Oncology Institute	Ministry
Non-Traditional Medicine Center	Ministry
Hemotology and Blood Transfusion Center	Ministry
Physiotherapy Institute	Ministry
National Institute of Health	Ministry
Psychiatric Dispensery	City
Children's Hospitals	
Arabkir	City
Stomatology Center	Ministry
Stomatology Center	Ministry
Republic Children's	Ministry
No 2 Children's Hospital	City
No 3 Children's Hospital	City
No 4 Children's Hospital	City
No 6 Children's Hospital	City
No 7 Children's	City
Children's Emergency Center	City
Maternity	
No 1	City
No 3	City
No 4	City
No 5	City
Center of Gynecology	Ministry
Sourp Astvadzamajr	City

Final List of Hospitals Used in Sampling Physician Survey

Hospital	Jurisdiction	Number of phys Unicef	Number of phys DOH	Number for sample	Cum. #	number of clusters
Emergency Center	City		399	399	399	3
Erebuni Hospital	City	220	277	220	619	1
No 8 Hospital	City	191	294	191	810	2
No 3 Children's Hospital	City	191		191	1001	1
Emergency Center-Minassian	City		177	177	1178	2
Masiv First Care Hospital	City	176		176	1354	1
Children's Emergency Center	City		152	152	1506	1
Malatia Hospital	City	145	150	145	1651	2
No 2 Adult Hospital	City	122	111	122	1773	1
No 1 Factory Hospital	City	100		100	1873	0
No 3 Adult Hospital	City	90	82	90	1963	1
No 4 Children's Hospital	City	87	93	87	2050	1
No 7 Children's	City	70		70	2120	0
No 2 Children's	City	48	49	48	2168	1
No 4 Maternity	City	48	58	48	2216	0
No 4 Factory Hospital	City		39	39	2255	0
No 3 Maternity	City	38	43	38	2293	1
No 1 Maternity	City	37	28	37	2330	0
Sourp Astvazdamajr	City		36	36	2366	0
No 5 Maternity	City	32		32	2398	1
No 4 Adult Hospital	City	27	39	27	2425	0
Arabkir	City	27		27	2452	0
Infection (adult)	City	23	20	23	2475	0
No 6 Children's	City	21	24	21	2496	0
No 5 Factory Hospital	City		17	17	2513	0
Republic Hospital	Ministry	245		245	2758	2
Mikaelian Surgical Institute	Ministry	174		174	2932	2
Oncology Institute	Ministry	120		120	3052	1
Republic Children's	Ministry	116		116	3168	1
Hygenic Hospital	Ministry	99		99	3267	0
Hematology and Blood Transfusion Center	Ministry	80		80	3347	1
Gynecology (mat and child health)	Ministry	65		65	3412	1
Cardiology Institute	Ministry	59		59	3471	0
Republic Ophthalmologic Institute	Ministry	58		58	3529	1
Center of Gynecology	Ministry	54		54	3583	0
No 1 University	Ministry	46		46	3629	0
Traumatology Institute	Ministry	43		43	3672	1
Proctology Institute	Ministry	38		38	3710	0
Posttrama Hospital	Red Cross	10		10	3720	0
4 Special Hospital	Special	71		71	3791	1

interval=126

Hospital Cluster Assignments

Tsovinar (Total = 8)

Emergency Center Minassian (2)	6/29
Malatia Hospital (2)	6/30
No 2 Adult (1)	
No 2 Children's (2)	7/1
No 5 Maternity (1)	

Vartouhi (Total = 8)

Oncology Institute (1)	6/29
Mikaelian Hospital (2)	6/30
Emergency Center Gayan (3)	7/1, 7/2, 7/3
4 Special Hospital (1)	7/2
No 3 Adult (1)	

Artashes (Total = 7)

Gynecology Institute (1)	6/29
No 8 Hospital (2)	6/30
No 4 Children's (2)	7/1
Republic Hosp. for Children (1)	7/2
Hematology and Blood Institute (1)	

Gevorg (Total = 7)

Ophthalmologic Institute (1)	6/29
Republic Hospital (2)	6/30
Children's Emergency Hospital (1)	7/1
Erebuni Hospital (1)	7/2
Traumatology Institute (1)	
No 3 Maternity (1)	



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